NIOSH

Abstracting and Indexing Guide

for

Automated Storage and Retrieval System

by

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FOREWORD

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I. INTRODUCTION

This document presents a guide to the abstracting and indexing methodology that has been developed as a means for retrieving technical information from library files in the Technical Information Center (TIC) system of the National Institute for Occupational Safety and Health (NIOSH). The NIOSHTIC system has multiple files and is amenable to search through use of the computer established search files. The system provides reference information pertinent to occupational safety and health issues and related standards development. This guide provides procedural and reference information to abstracters, indexers, and editors for preparation of the input information to the NIOSHTIC search files. The information presented in the guide will also be of interest to the systems analysts and users and to other persons who are involved in developing or querying any of the files.

After the introduction and system overview, the guide is developed on a unit/file basis, with each unit or section relating to a specific search file of the system. The pages of each section are numbered independently for publication in loose-leaf format and to facilitate the insertion of updated information. Such updated information will be disseminated on a timely basis as it occurs during development and implementation of the system and of additional files.

The abstract that is produced for the system is designed specifically to allow selective retrieval of documents from voluminous files. The abstract is developed for use in natural language in an automated system that has text search capability through the keyword and body sections of the abstract.

Keywords are provided in the abstract to augment computer searching, and to permit semi-automated or manual searching, if desired. The abstract will be generated and disseminated or published through the computer system, and will be so processed by semi-automated or manual means as well. The abstract can be used, with minor adjustments for the computer and programming language, on any available hardware system, with any level of language, and in such programs as DOC PROC or GIS, or in other developed programs.

Because of constraints imposed by mechanized systems, particularly the requirement for consistency in a system, the guidelines, procedural and reference, must be followed until formally changed by the system developer and made known throughout the system. When such changes are made, the abstracter will be furnished the appropriate updated information by the abstracts supervisor. It is important, then, for the abstracter to have a working knowledge of the guidelines to whatever extent the guidelines are current. In this light, the abstracter is expected to use the guide as a working reference. The abstracter is expected to incorporate all updated information into the guide, and to use such information, as soon as the updated information is known. It is a good idea during the beginning of abstracting practice that the abstracter often refer to the procedural portion of the guide for familiarization. It is imperative that the abstracter always consult with the appropriate supervisor on any question he cannot answer.

II. NIOSHTIC SYSTEM: OVERVIEW

The NIOSHTIC system is a large scale technical information system developed to provide information for research, for standards development, and for public use in relation to occupational safety and health. The system is developed on a unit basis, with files according to the characteristics of the information.

The first file in the NIOSHTIC system is the Scientific and Technical Information File with a base of about 23,000 documents and expected growth of about 6,000 documents per year. The Scientific and Technical Information file, composed of the library file and the computer-based search file, is the NIOSH-1 file.

The NIOSHTIC thesaurus is a computer-generated consensus, open-ended list of scientific and technical terms. Its approximately 18,000 main terms and 5,000 subterms are included in the vocabulary and terminology of the NIOSH-1 search file. The NIOSHTIC thesaurus is the NIOSH-2 File.

The Toxic Substances List is an annually published, open-ended list of approximately 20,000 compounds and materials, with available Chemical Abstract Services (CAS) Registry Numbers, having known hazard to workers. The Toxic Substances List is the NIOSH-3 File.

Other files for the NIOSHTIC system are under current development.

III. SCIENTIFIC AND TECHNICAL INFORMATION (NIOSH-1) FILE

A. GENERAL

The Scientific and Technical Information File (NIOSH-1) is composed of a library and a search file. The library file is a collection of documents maintained in several locations, which contain information from various sources pertinent to occupational safety and health. Information from and relating to the documents will form a computer data base or the NIOSH-1 search file.

The file identifier, NIOSH-1, is used to distinguish the Scientific and Technical Information File from other files which may be in the NIOSHTIC system or other systems. As other NIOSH files are developed for the NIOSHTIC system, file identifiers for such files will be specified in the appropriate section of the guide. This section of the guide is specifically applicable to the NIOSH-1 search file, but may be generally applicable to other search files when such files are generated.

For convenience, 'NIOSH-1' will generally be used in this section in place of 'Scientific and Technical Information Search File' since it is the search file rather than the library file which is the primary subject. When reference to the library file is intended, 'NIOSH-1 library file' or 'library file' will be used.

A.1. File Description

The NIOSH-1 search file is designed to provide information for retrieval of documents concerning the health and safety of workers. The file is intended to provide the information to persons or organizations who are directly or indirectly engaged in research in occupational safety and health, or in development, promulgation, or enforcement of occupational safety and health standards. The file is also intended to provide on request such information to anyone with interest in such documents.

Documents for the NIOSH-1 library file include reports, books, journals, conference proceedings, technical papers. pamphlets, guidebooks, glossaries and thesauri, monographs, and other publications. The documents may be in printed (hard copy), microfiche, or other form.

The documents contain information on, or relating to, the effects of working environment and conditions and work processes and materials on the safety and health of the worker; methods and instrumentation for determination of such effects; measures for elimination of work hazards; and protective equipment for prevention of injurious effects to the worker. Subject areas of the documents are generally interdisciplinary. The subjects covered include toxicology, physiology, medical and allied health fields, biological sciences, chemistry, physics, industrial processes, human factors engineering, and many other interests, with varying degrees of overlap, and to various levels of specificity within disciplines. Topics are as diverse as analytical techniques and instrumentation for detection of hazardous material in atmospheres, laboratory determination

of the contribution of aniline dyes to bladder cancer, and statistical analysis of the incidence of respiratory disorders in workers in trades using various kinds of asbestos.

Sources of the documents are worldwide. The documents come from national, state, and local government agencies; educational, clinical, and research institutions; measurement and testing facilities; professional and technical organizations and groups; commercial and industrial organizations; other public and private organizations; and individuals; in short, any organization or individual that may contribute information related to occupational safety and health. The documents are made available in the NIOSH libraries through the document publishers and other library sources such as document/information clearinghouses.

Principal users of the information from the documents are expected to be scientifically and technically oriented persons; however, users with other orientations are also expected. The user group is expected to be as diverse, and with overlap of interests, as the subject materials; and can be expected to include scientists, engineers, technicians, physicians and other medical persons, legal and administrative persons, and, in fact, anyone with interest in the information contained in the documents.

A.2. Abstracting and Querying Considerations

Queries can be expected at some time or other for any information that may be located anywhere in the file. The queries may involve any of the varied subjects and may be very general in some cases, and more or less specific in others. Users

may submit single or multiple queries involving single or multiple concepts. The queries are not expected to be always interrelated, or to have the same or coincident time-response requirements.

The search file established on computer permits random searching on a direct file access basis. In this way, responses to information requests can be generated with minimum searching effort and time. The file is not arranged by subject, date, or other categories but, for easier searching and orderly processing and maintenance, is established in the order in which the documents are entered into the retrieval system. Such information as subject categories and dates are used, however, in the identification of the documents that are input to the file.

An abstract which uniquely identifies and characterizes the document will be generated for each document that can be identified in the NIOSH-1 library file, and will be established in the search file on computer. A query search of the computer file for information will return the appropriate abstract for any document containing the desired information as an answer to the query. The file must, therefore, contain all of the significant information in a searchable format for locating the desired document and must generate such information upon request.

The function of the abstracter in relation to the NIOSH-1 file is preparation of the initial input information to the file, which when responsive to a query, will become the eventual output of the file. The abstracter must extract significant information from the documents and record the information so that the documents can be found in a search of the file.

In the abstracting process, some ability to understand the information in the document will be necessary, as will some ability to convey information accurately and well. The abstracter should always ask, "What is this document talking about?" or more precisely, "What is the point of interest in this document?" Only when the point is determined should the abstracter ask the next questions, which he must, "What is this document saying?" There is no overriding need for subject specialization, recourse to technical dictionaries and references being usually adequate for abstracting. The abstracter need merely read well and interpret correctly. The abstracter is not required or desired to draw conclusions concerning the information. The abstracter's function is reportorial and editorial, rather than tutorial or critical.

The abstract for the NIOSH-1 file will be indicative and informative. Basically, the abstract will be a bibliographic citation for the document, giving particular information for identifying and locating the document in the search and library files; with keys (or keywords) for locating the document in the computer file in relation to informational concepts contained in the document; and an extract which is an analysis of the document contents and is, in some ways, an explanation, extension, or interpretation of the document title. The abstract will identify a document and will indicate why and in what way the identified document, with the given title and reference, provides an answer to a query. To be useful in an information search, the abstract must first tell what the document is concerned with, and next tell, succinctly, what the document says. For optimum utility in the system, the abstract should be specific, but not detailed or lengthy, and must contain indexable concepts.

The abstract will normally be between 100 and 225 words in length, including keywords, but may be shorter or longer as dictated by the information content of the document. For economy and efficiency in the system, extraneous information will not be entered into the abstract. As the files will be searched on the basis of the bibliography and text of the abstract, the title of the document, being a part of the bibliography, will not be included in the text. Words or terms which appear in the text of the abstract will not be used as keywords for the abstract, keywords being considered by the system as part of the text. For increase of query search efficiency, however, Chemical Abstract Service Registry Numbers for chemicals and compounds mentioned in the title or text of the abstract or in the document will be incorporated into the abstract as keywords.

Because the abstract must identify and characterize the information of the complete document, information for the abstract may be extracted from any portion of the document and may be expressed in any terms which the abstracter considers significant. The abstracter may use the abstract or summary of the document, or an abstract prepared by an information service for the document, if such are available, as the input abstract to the system, provided that the information given is sufficiently indicative of the information contents of the document. In the same way, the abstracter may use any portion of a pre-existing abstract, or any other information relating to the document, as is necessary to fulfill the query search requirements. The abstracter may change, condense, expand, or paraphrase any wording from the document so long as the meaning and accuracy of the information from the document is not changed in the abstract.

When a request is made for information, the computer file will be searched using logical concepts for the information which can be identified by computer and which are specified in a query. When the concepts are found in the search file and match the query specifications, the abstract containing the search concepts is returned as an answer. The query specifications can be made on the basis of single concepts, such as 'asbestos', or multiple concepts in various associative relations, such as 'asphyxiation' or 'suffocation' (commutative), 'cadmium' and 'poisoning' (inclusive), 'drugs' but not 'aspirin' (exclusive), or combinations, such as 'respiration' and 'disorders' with 'pneumoconiosis' or 'asbestosis' but without 'silicosis'. For most queries, multiple concepts are anticipated. As the computer can effectively scan the whole abstract, the sought-for information may occur anywhere in the abstract. A match can be made on information in the bibliography, keywords, or body sections. (However, see C.13 page III-80 for limitation in using the bibiliography as a search area.)

For the NIOSH-1 file, a document is considered to be an entity of information which can be identified. A book that is complete and identifiable is a document; a technical paper or report that is complete and identifiable is also a document; and a book full of technical papers, the book and the papers being complete and identifiable, can be considered one document in relation to the whole book and a number of documents in relation to the papers, one document for each paper. In this light, the term 'document' will be used as a convenience to refer to books, journals, papers, reports, or any type of documents for the NIOSH-1 file, generally, unless further distinction is necessary.

This Section III provides guidelines and specific instructions for completing each field of the abstracting forms. While the guidelines are specific for the fields concerned, they are general for the information called for; that is, some information might not fit neatly into the fields provided. Information for one document might be given in form different from, or more or less complete than, information for another document. In such cases, the abstracter should consult a knowledgeable person to help in handling the difficult information. In fact, it is a good idea that a knowledgeable person be asked for help in any difficulty which the abstracter may have in preparing the abstract.

Care should be taken in completing the abstracting form. All fields which require information should be filled when the information is known or can be found out; otherwise, the abstract should not be written. Of course, in some cases, some of the fields might not require information; the information for some of the fields might not be given or cannot be found out; or some of the fields might not be applicable for certain types of documents. It is a good rule of thumb, particularly in the early stages of abstracting, that the abstracter put a check mark in each field that is intended to be left blank. In this way, the abstracter is less apt to overlook a field that should contain information. Before the specific guidelines are given, some general guidelines should be understood:

It is important that all information entered into the abstract be accurate. There should be no misinterpreted information, wrong or transposed numbers, misspellings of terms and names, or other errors which lead to misinformation.

It is important that the abstracts and the information contained be correctly and clearly identifiable by the computer and the querier in a search for information.

It is important that the abstracter understand that all errors, misinformation, misrepresentations, and unresolved problems concerning the abstract are the responsibility of the abstracter. Other persons who handle or process the abstracts are responsible only for their own errors and misrepresentations. The abstracter should prepare each abstract as perfectly and completely as possible: The abstracter must not rely upon the editor, copy preparer, or systems personnel to catch mistakes or resolve problems. As the creator of the abstract, the abstracter is obliged and must be prepared to answer questions concerning misunderstood or unfathomable parts of the abstract by the editors and by systems and copy preparation personnel who are preparing the abstract.

It is important that the input abstract be legible. Abstracts may be handwritten, printed, or typed; typed or printed abstracts are preferred. All information in the abstract, alphabetic or numeric, should be distinguishable to whoever handles the abstract; when numbers and letters occur together, numbers should be distinguished from letters.

In short, the care by the abstracter in preparing the abstract will have much to do with the utility of the abstract, and whether or how well the information system works.

Guidelines for selection of concepts and construction of the abstract are given in Section B. Procedures for use of abstracting input forms in preparing abstracts are given in Section C. In addition there are appendices concerning technical names and editor queries.

B. ABSTRACTING AND INDEXING GUIDELINES

B.1. Abstracting and Indexing Considerations

Abstracting and indexing are fundamental processes in an information retrieval system, particularly a large scale automated system involving many documents with multiple and varied subjects and uses. Abstracting and indexing are the procedural and analytic techniques through which information, once gathered, is put into the system.

The theory in developing such a system is that when a computer is given intelligible and accurate input information, the computer can generate a searchable file. In response to the query specifications, the computer can scan such files efficiently and generate useful answers much faster than by manual searching of documents. For searching efficiency, the input file must accommodate all of the information necessary for retrieving the desired answer to the query. How well the system will work depends upon how well the input information is generated, as attested to by the old system maxim: Garbage in, garbage out.

The function of the abstracter in relation to the NIOSH-1 file is preparation of the input abstracts to the search file. The abstracts will represent documents in the library file and as answers to queries will indicate the documents sought through the queries. The abstract must carry all of the information that is needed for locating the document. The abstract must carry the search information in retrievable form and, when found, must be useful in retrieving the document. The information must be conveyed in the abstracts precisely.

On the same basic level that the abstract is related to the system, the system is related to the querier or user. The abstracter must understand that the documents are retrieved only for the user. The abstracter must view a document from the standpoint of the user to anticipate what information in the document will be of interest to a user, and in what way the user will ask for the information.

B.2. Analysis of Documents

Abstracting and indexing of a document are accomplished through analysis. There are many different ways in which a document can be analyzed and many ways in which the analyses can be represented.

A table of contents is an analysis of a document in terms of the organization of the information content and its titular location. An index is an analysis of a document in terms of the subjective content of the information and the location of the subjects in the document. The author abstract or summary is an analysis, as are graphs, charts, and tables, although the latter devices may be analyses of only part of the information in the document. Each type of analysis has its own characteristics and functions oriented to a particular application, the table of contents for forward reference, the index for back and cross reference, and so on.

It is considered good practice to use the document abstract or summary as the system input if sufficient. Normally, the document abstract or summary does not contain all of the indicative and informative content needed for use as a retrieval tool. The abstracter must often supply the missing information. The NIOSH abstract form will be discussed in C, beginning on page III-30. As will

be noted, the abstract consists of a bibliography and a two-part (body and keywords) text.

Information may have different relevance according to the user. The finding of cancer in a human would be relevant to a medical doctor in terms of treatment and cure, first, and causes, second; the findings would be relevant to an industrial hygienist in terms of causes, first, and treatment and cure, second. The information may have different relevance according to context. Both the medical doctor and the hygienist would be interested in cancer in terms of prevention, the medical doctor in relation to people, generally, and the industrial hygienist in relation to workers, specifically. The information may have different relevance according to subject. The finding of cancer in a mouse would have relevance in determining a cause of cancer in man to both the physician and the hygienist; perhaps the only relevance of the cancer as far as the mouse is concerned is to the breeder of mice who is trying to figure out why his stock is dying or to the cancer researcher who is interested in comparing research data.

One aspect of relevance should be reinforced: The users of the NIOSH-1 file are interested in the health and safety of people at their place of employment. Documents which are abstracted for the system should always have some practical implication as to the health and safety of the worker. This is not to say that a document which does not specifically mention 'health', 'safety', or 'worker' should not be abstracted. Nor is it implied that the abstracter should impute such information to a document that does not contain such.

The intent is to establish a point of reference: The emphasis of the NIOSH-1 file is on information contributing to the safety and health of people at work.

It would be impossible to provide a complete listing of the types of user who would desire documents from the file. A catch-all description of the expected users is given in the last part of Paragraph A.1 on page III-3. The criterion, then, for determining the significant concepts of the document in terms of the user and generating a useful abstract is simply determining the central theme of the document and conveying this theme in the abstract through whatever information is needed to make the theme clear to the querier and user.

In determining how the querier will ask for a document, the abstracter should consider the universal user. The document is most likely to be looked for in the terms used by the greatest number of users. For example, in an article concerning a clinical examination, it is not good form to use the word "technic" simply because many physicians spell "technique" that way. Most people would use the ordinary spelling. However, if imprecision results from the more general term, the unilateral term should be used. For example, if a physican uses the term 'carcinoma', the more generally used term 'cancer' should not replace the specific term, as a different level of meaning or specificity is implied, if not intended. It is generally good practice to adhere to the terminology of the document because there is less danger of misrepresentation.

In preparing the body portion of the text, the abstracter makes the analysis on the basis of explicit information which is significant and can be extracted from the document. In preparing the keywords, the analysis is made on the basis of implied information, with the exception of CAS numbers (which are explicit), which can be expressed for the document from the information contents. In each

case, the abstracter is looking for or using indexable terms, which can be retrieved in a search, and is anticipating and generating an answer to a query.

Terms in the body portion of the abstract should be quite specific to the degree that the search is not limited. For example, 'cancer' is a more specific term than 'tumor', but is less specific than 'carcinoma'; 'aromatic compounds' is more specific than 'organic compounds' but less specific than 'phenylnaphthylamine' The criterion here is, as before, the point of the document. If a document were discussing 'aromatic compounds' generally, 'phenylnaphthylamine', would be an illogical search term for the document as a keyword but a good term for the body of the abstract if phenylnaphthylamine were one of the aromatic compounds discussed. At the same time 'organic compounds' would be too general as a keyword or body term, there being many other kinds of organic compounds beside aromatic compounds. Usually, a very general term is only good in a search if the term is combined through the search logic to form a search term, examples being 'personal', 'protective', and 'equipment', each of which is too general for a search as a stand-alone concept. Even when joined by the search logic, some general terms, including the above, are not very useful, as the classes formed are too broad. The best technique is to specify 'respirators', if that is what the document discusses, or to use 'personal protective equipment' if the document discusses such. On the idea that only useful documents will be put into the system, there is a good chance that whatever concept is found in a document will be useful in a search. It is when the concept is made too specific or too general, or given other unusual forms, that the concepts become illogical.

The user interest in the documents of the system is indicated generally in Paragraph A.1. File Description, page III-2. The list is discussed here with no intent to be all inclusive or exclusive. Generally the system user is interested in the safety and health of workers. The user is interested in the effect of the work process, working conditions and environment, and agents and equipment used in such processes on the worker. Of interest are instrumentation and equipment for detecting hazardous conditions or protecting the workers from such conditions; methods for detection of such conditions and for analysis of deleterious effects, and preventive or protective measures for eliminating or reducing such hazards, including legislation and standards.

Certain ideas go together naturally. A working process normally has conditions or an environment in which this work takes place. Industrial work generally generates noise. So, noise control in the working environment is an interest factor. Some industrial processes are carried on in environments or with materials which generate hazards that may be seen through normal association. Grinding, for example, may be expected to produce dust; chemical processing may be expected to produce fumes; work with machine tools may cause injury; flammable material may cause fires and explosions; and so on. In the same way, analytical processes are used to determine something; detection equipment is used to discover something. The associations are almost obvious in many cases, and the abstracter should look for them in the analysis.

In considering a trauma, the analysis, then, should be made in relation to the work-related aspects when given, instead of detailed description of the trauma. Asbestos is of concern for the deleterious effects on workers, not for its many

uses in siding or insulation. Antibiotics are of interest, not because of the curative powers, but because of the effects on workers who handle them. Such relation should be seen by the abstracter, and the relevant analyses made.

B.3. Selection of Terms

The choice of terms for conveying the information or for responding to a search is no less important than selection of the informational concepts of the document.

The terms in the body of the abstract convey the information to the querier and provide search clues for the document. The keyword terms form the index to the document and also provide search clues for the document. Because of these important functions, the abstracter must select words for the abstract with care. Every word that is used in the abstract must have some reason for being in the abstract.

Terms which represent the information of the document should be indexable, content words. Whether a term is a keyword, the term should provide keys to the information. Terms that are used in the body of the abstract should be explicit and should be taken directly from the document when possible. Keyword terms, being implicit, are made for the document, rather than from the document.

There are many ways for selection of terms for the abstract. Words which are used in the body of the abstract tend to cluster in the introductory and summary portions of the document, and sometimes in the methodology section and in graphs, charts, and tables. Keywords tend to be found in subheadings, and in captions

to graphs, charts, and tables. Here, the abstracter can use the same words as the document author.

Keywords and other terms may be found in other documents in the same collective document as the abstracted document, for example. A good source of such terms is reference works concerning the subject field of the document, such as dictionaries, glossaries, subject heading lists, and thesauri: The abstracter should use such references whenever possible.

The NIOSH thesaurus is part of the NIOSH system. The thesaurus provides consensus words used in the subject fields which are of interest in the NIOSH-1 file. The thesaurus is intended for use by the abstracter in writing the abstracts and for use by the querier in searching the files. In this way, words which will be used in the system are available to the person involved in the input phase and the search and output phase. The abstracter is, therefore, required to use this thesaurus as a working tool.

For keywords, there is also a keyword list furnished by the abstracting supervisor (see C.13.1, page III-82). A methodology for developing keywords from chemical names is given in Appendix A.2., page A-2., with a listing of common chemical name keywords. The abstracter may use the keyword list as a guide for keyword selections.

Index entries are, as mentioned before, stand-alone terms, which have content. Nouns and verbs may, as a rule, have content; other forms of words do not. The term 'red' cannot stand alone, and has no content; the term 'redness' can stand alone, and has content; 'red' is not indexable; 'redness' is indexable.

In selection of keywords, the abstracter should not use words which are just another way of saying something. The querier is not apt to look for 'insecticides' under 'larvicides' simply because insects have larvae. The querier would have 'larvicides' in mind if the term were used, or have 'insecticides' in mind if that term were used. Both terms could be looked for by the querier under 'pesticides' which might be a better keyword to use with 'insecticides' if the information warranted.

The key to selection of terms is whether the terms reflect the information in the document, are indexable, and are familiar to the querier. The abstracter should select words which carry the most information, are right for the document, and are a part of the vocabulary of the user.

B.4. Common Sentence Patterns

Analysis of a document can be accomplished rather easily if the abstracter views the document as a sentence. Usually a document expresses one central idea or theme, which is the same function as a sentence, regardless of complexity or length.

The pattern of the document theme, or sentence, may be expressed in different ways according to the subject and nature of the document. There may also be many secondary ideas or themes expressed in the document in description, explanation, extension, or interpretation of the central theme. Such themes can be considered secondary sentences to a main sentence representing the document, or, in fact, phrases of the main sentence.

Usually, the technical document is written to a specific pattern. This is generally true of documents in scientific and technical journals which, as a rule, follow the logic of scientific method. Normally such documents will give background information for a particular view or investigation, describe the methodology and possibly the instrumentation, discuss the development of the investigative process, and summarize the findings. Such documents are usually accompanied by abstracts or summaries.

For the most part, technical documents follow one or a combination of four sentence patterns:

1) Process

The process sentence describes an action directed to a subject or object, and relates what happens to the subject or object when a change of characteristics is involved.

Examples of process-type sentences include testing of a respirator for protection against air contaminants, or X-ray examination of the chests of asbestos workers to determine the presence of asbestosis, or statistical analysis of the incidence of bladder cancer in workers in the dye industry. The key to the process sentence is that the action or process is usually to accomplish or determine some result.

2) Product

The product sentence describes an object which is produced as a result of a process when something different is made from the original object.

Examples of product type sentences include development of a respirator for protection against air contaminants, or production of asbestos sheeting from raw materials. The key to the product sentence is that something is produced.

3) Description

The description sentence describes a subject, or process, and relates the characteristics of the subject, or the methodology, and sometimes the results of a process.

Examples of the description sentence include design characteristics of a respirator, operational characteristics of a respirator, symptomology of of a disease, or safety procedures in an industrial plant. The key to the description sentence is that no action generally takes place; the sentence is reportorial.

4) Review

The review sentence is a special form of the description sentence in that a subject or process, or several of either or both may be described and discussed. The review applies to any topic.

Examples of the review sentence include discussion of the effects of a new standard, comparison of impinger testing to other test methods for determination of asbestos in air, or report on several monitoring techniques. The key to the review sentence is that no action takes place, and multiple ideas are usually given in support of the main idea; the sentence is reportorial.

5) Combinations

Combination sentences generally are of the process-product type in which an object is subjected to a process, the characteristics of the objects are changed or a result is achieved, and a product is developed.

Examples of combination sentences include determination of a carcinogenic agent in the urine of chemical plant workers through a given laboratory technique, or development and testing of a detector system for monitoring radiation sickness.

Some documents will conform specifically to any of the patterns shown. The patterns should be used only as guidelines.

The abstracter may use the sentence concept to generate one or a number of sentences in the abstract. The abstracter must make sure that the main informational concepts of the document are put into the abstract with as much of the secondary information as is necessary for making these elements clear in a search.

B.5. Reference Considerations

The purpose of the reference is to provide, with the title and author information, the necessary information for locating the physical document represented by the abstract in the NIOSH-1 library file, or, if need be, for obtaining the document from the document source or publisher. At the same time, the reference indicates some characteristics of the document, such as volume and comprehensiveness of information contained, so that the system user may decide whether the document will be of interest.

The relevancy of reference information is different for different types of documents. For example, the pagination of a technical report is not important, but the number of pages of the report is important information for estimation of scope and comprehensiveness; conversely, the pagination of an article in a journal represents needed information for locating the article, and the number of pages is less relevant.

In general, the kinds of information that are wanted in the reference (which will be discussed in C.10, page III-58) include:

1) The name of the collective document of which the abstracted document is a component.
2) The publisher, sponsor, or issuing agency, or promulgator of the document. (In these and the following paragraphs, 'publisher' will be used for 'publisher', 'sponsor', 'issuing agency', and 'promulgator', as applicable, unless further distinction is necessary.).
3) The place of publication, if relevant, or the circumstance (including place) of presentation of the document.
4) The report number of the document, if given, or the contract or grant number.
5) The original publication or presentation information of the document (which may be of the same kind as above) if the document is a reprint, translation, or similar form.
6) The serial number, volume number, and issue number of the document, if given.
7) The edition of the document, if given.

8) The name of the corporate author of the document, if no human author is given.

9) Other information which is determined as pertinent, such as the fact that a document is a conference paper or that the document is a preprint.

The above information is used in the abstract as applicable. The following information must always be given in the REFERENCE field:

1) The number of pages or the pagination of the document, whichever is applicable.

2) The number of references (or footnotes) used in the document, if given.

Certain information is considered to be extraneous to the reference. The following information is not entered into the REFERENCE field of the abstract:

1) The affiliation of the author of the document, unless such affiliation can be determined to be the publisher.

2) The physical form or output/distribution media of the document, such as microfilm, microfiche, magnetic tape, book, list, pamphlet, or data sheet.

3) The availability of the document, including whether the document is in print, from whom and how to order the document, and the price of the document.

4) The type of document, such as journal, article, book, deposition, collection, or index, except as indicated above (Such information, if pertinent, may be entered into the TEXT field (see C.13, page III-)).

5) The translator of a document, unless such can be determined to be the publisher.

6) The disseminator of the document, unless such can be determined to be the publisher.

7) The country of origin of the document, unless such origin were otherwise unclear.

8) The proprietary or intrinsic nature of the document, such as federal or state report, local decree, or company bulletin, unless specifically directed.

B.6. Style and Mechanics

The decision on how the abstract is written is left to the abstracter. After judicious selection of the information concept and the terms to represent such concepts, the abstracter should express the information with some expertise, or the work effort and the desired document will be lost or rejected. Since writing style is subjective, no particular style is recommended.

The abstracter should try to develop continuity in the abstract. For example, the abstracter should not end sentences on phrases such as 'are given' or 'is discussed'. The reader is, in such cases, forced at that point to go back over the sentence to determine what preceded the phrase. Also, some logical connection, if possible, should be made between sentences in the abstract to avoid a choppy, stop-and-go effect which makes the user wonder what all of the verbiage means. In addition, to avoid ambiguity, it is good practice to avoid use of pronouns, such as 'it' or 'them', which may have hidden antecedents.

The abstracter may type the abstract (which is a preferred, but not necessary, method). The abstract should be typed in upper and lower case, as the information appears in the document. If the abstract is handwritten, the writing should be legible. A good practice is to print, using large capital letters to represent capitalization (initial capital or all upper case) and small capital letters to represent small (lower case) letters.

Example:

ASBESTOS	(Lower Case)
HODGKINS DISEASE	(Initial Capitalization)
ACTH	(Upper Case)

Numbers should be plain, and distinct from letters when ocurring together; for example, the letter 'I' should be distinguished from the number '1' by putting serifs (top and bottom bars) on the letter, as 'I'; the number '0' should be distinguished from the letter 'O' by underlining the letter, as '0'; the letter 'S' should not look the same as the number '5'; the number '6' should not look the same as the letter 'G'; the number '1' should not look the same as a slash '/'; and the number '2' should not look the same as the letter 'Z'. (When using the typewriter, characters which should be differentiated are: the number '0' from the letter 'O' by underlining the letter, as '0'; and the number '1' from the letter by underlining the letter, as '1''.) It is also good practice to know which special characters can be handled in the computer system. For example, Greek letters and symbols cannot be used by the computer, but are important in a number of cases, as in the names of some chemical compounds and types of radiation, and may not be omitted from the abstract. The required procedure here is to spell out such symbols as 'alpha', 'beta', 'gamma', and other similar ones.

Any character or special symbol which is in the character set listed in B.7, Acceptable Characters, page III-27 is acceptable to the system. Special symbols, including superscripts (such as for exponents), and subscripts (such as in chemical formulas), which require manipulation of line spacing in the MT/ST operation, are unacceptable to the system: for example; 'o' (degree), 'Å' (Angstrom), '4^2', 'cm^3', 'H_2SO_4', '+' (positive ion), '-' (negative ion). Special symbols which may have unclear meaning or more than one meaning are unacceptable to the system, such as ' (feet or minutes), " (inches or seconds), '#' (number or pounds). Such symbols, superscripts, and subscripts must be interpreted by the abstracter; in which case, the interpretation is typed into the abstract. Subscripts in chemical formulas which might prove difficult to interpret, such as $C_{12}H_{22}O_{11}$, are written according to a convention; that is, by placing a hyphen (-) after the subscripted number as C12-H22-O11. Subscripts or superscripts for isotopes of elements, such as 'C_{13}' or 'C^{14}' are written with a hyphen preceding the subscripted or superscripted number, as 'C-13' or 'C-14', respectively.

One repeated and continuing caution, the abstracter should check his work. Although provision can be made in the system to catch some errors, there is less chance of errors going into the system if the abstracter tries to catch the errors in the first place.

Spelling should be checked carefully, as through misspelling, different words than are intended are created, causing rejection or misinterpretation by the system. The abstracter should read through the abstract for continuity to make sure that the expressed ideas make sense and to see if words, such as 'not', which would change the meaning or clarity of the ideas, are left out.

B.7. Acceptable Characters

The following list of characters are in the character set of the magnetic tape (MT/ST) input device and are recognized by the computer system in processing and searching the abstracts. The characters are listed in the order of sorting on the IBM System 360-System 370 computers, which determines which character has precedence in the system. Each character listed is different from every other character; for example, a lower case 'e' is not the same as the upper case 'E'. Other characters which appear on the MT/ST keyboard are unacceptable to the system for reasons given in B.6, Style and Mechanics, page III-26.

Sorting Sequence

space	%	a	n	A	N	0 (zero)
¢	?	b	o	B	O	1
. (period)	:	c	p	C	P	2
(	#	d	q	D	Q	3
+	@	e	r	E	R	4
- (hyphen) (minus)	'(apostrophe)	f	s	F	S	5
/ (slash)	=	g	t	G	T	6
&	"	h	u	H	U	7
$		i	v	I	V	8
*		j	w	J	W	9
)		k	x	K	X	
;		l	y	L	Y	
, (comma)		m	z	M	Z	

C. PROCEDURES FOR USING THE ABSTRACTING/INDEXING FORMS

C.1. Form Description

Abstracting forms have been developed for use in preparing input abstracts for the NIOSH-1 File. The forms are designed to accommodate all pertinent information relative to a document in the file, in a format that is amenable to computer processing and to generation of the desired output abstract. The forms are applicable to all kinds of documents or information in the NIOSH-1 File. The forms are imprinted with the legend 'FILE NUMBER: NIOSH-1' and must be used by the abstracter and other persons involved for all abstracts which are entered into the computer file. No other forms may be used for abstracting the NIOSH-1 File.

The abstracting forms are a first page form (Figure 1) and a continuation form (Figure 2). The guidelines for entering information into specific fields of the forms are given in the numbered paragraphs of this section that correspond to the samples in Figures 1 and 2. There are no corresponding numbers on the actual abstracting forms; the numbers are given on the samples merely as convenient reference points.

The forms are arranged to provide fields for carrying information. The fields are drawn to provide free space for printing, using normal-sized letters and spaces. No computer conventions other than those specified in this guide are necessary for writing in the fields. Each field on a form will carry a specified kind of information. Only the information which is intended for a particular field may be written in that field: information which is intended for one

field may not be written in another field. Each field may have certain conventions for writing in that field. Conventions which are used in one field may not apply to another field: the abstracter must enter information only into the correct field using the correct convention.

Some fields on the forms provide for control information which must be entered onto the forms, but not into the system. The abstracter must not write information in the control fields that is not specifically called for. The abstracter must write only that information in other fields which is intended as input. Comments, explanations, notes, instructions to the typists, question marks, or other symbols, messages, or marks, with the exception of proofreading marks, must not be written on the forms.

NOTE: Comments, notes, instructions, questions, and such messages, when necessary, may be entered on the Editors Query and Critique Sheet (see Appendix 2).

The first page form is used as the first page of the abstract, and may contain a complete abstract. An abstract may extend, however, from the first page form onto continuation forms provided that proper identification of the abstract is made on all continuation forms and a count of the total number of pages comprising the abstract is made on the first page. The abstracter must not write any portion of the abstract, or any other information, on the back of a first page or of a continuation page. The first page form may not be used as a continuation form. As many continuation forms as necessary may be used.

The first page form provides fields for control information for use in production and quality control of the abstract; for identification information for

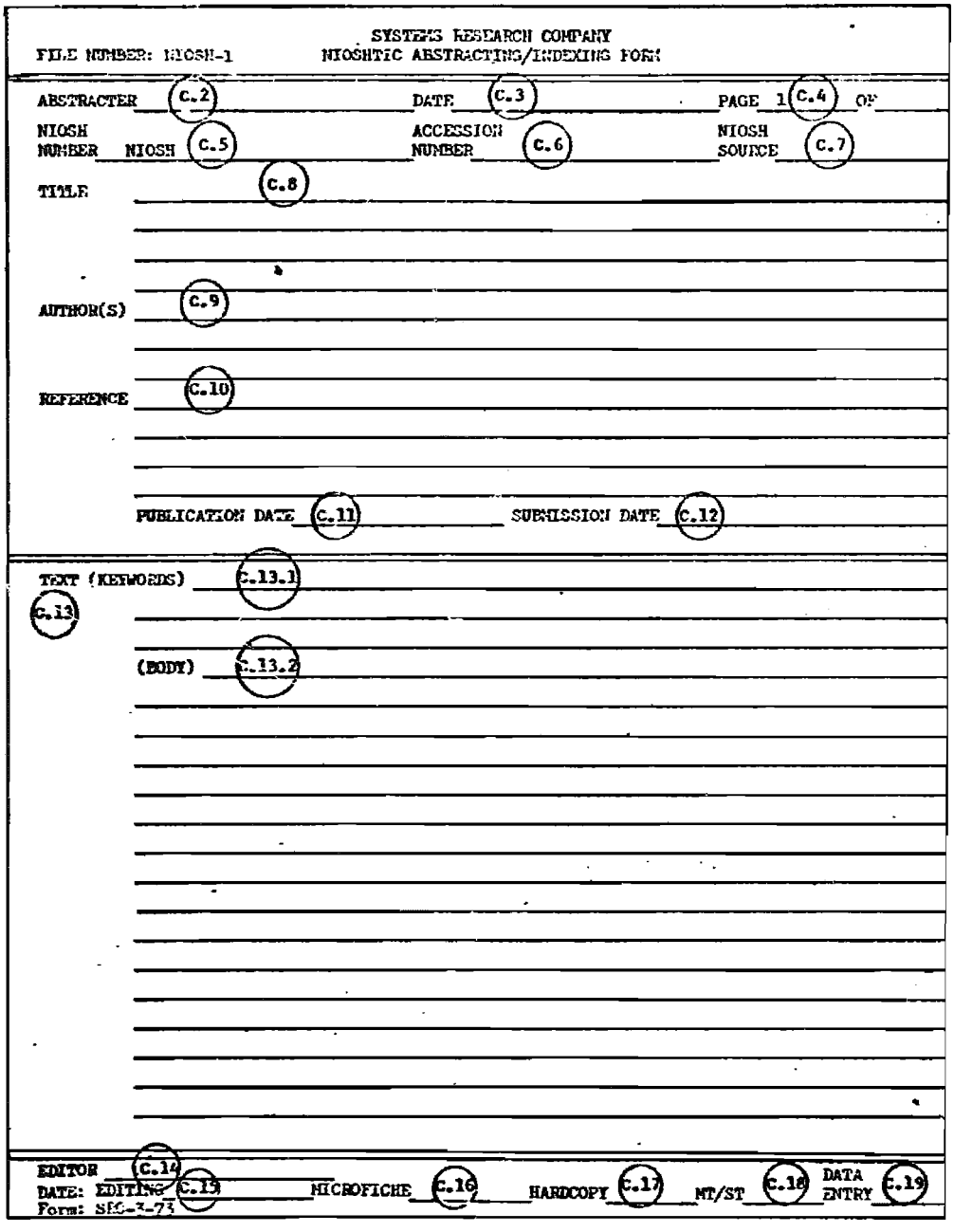

Figure 1. Abstracting/Indexing Form - First Page

SYSTEMS RESEARCH COMPANY
FILE NUMBER: NIOSH-1 NIOSHTIC ABSTRACTING/INDEXING CONTINUATION FORM

ABSTRACTER C.2 DATE C.3 PAGE C.4 OF

NIOSH NUMBER NIOSH C.5

TEXT (KEYWORDS) C.13.1

C.13

(BODY) C.13.2

FORM: SRC-4-73

Figure 2. Abstracting/Indexing Form - Continuation Page

use in identifying the document that is abstracted and the resultant abstract; and for text information for use in communicating and characterizing in the abstract the information which is contained in the document.

The continuation form provides fields for control and identification information linking the continuation pages to the first page of the abstract, and text information carried over from the first page.

C.2. ABSTRACTER Field

The ABSTRACTER field provides for identification of the person who abstracts the document.

Each abstract will have an ABSTRACTER field on the first page form and on continuation pages, if any. The name of the person who prepares the abstract is entered into the field in the order, last name, comma (,), space, first initial. No other information or punctuation is necessary or desired. The name must be identical on the first page and any continuation pages of the abstract.

Example:

ABSTRACTER Wesley, P.

The ABSTRACTER field must always be filled on the first page and on any continuation pages of the abstract.

C.3. DATE Field

The DATE Field provides for recording the date of completion of abstracting the document.

Each abstract will have a DATE field on the first page and on continuation pages, if any. The date is entered into the field as an 8-digit number, in the order, MMDDYYYY, representing the month, day, and year. No punctuation, such as hyphens (-) or slashes (/), or spaces can be used in the DATE field. The date must be identical on the first page and on any continuation pages of the abstract.

Examples:

(1) 'August 4, 1972' should be entered as

DATE 08041972

(2) 'December 12, 1973' should be entered as

DATE 12121973

The DATE field must always be filled on the first page of the abstract and on any continuation pages.

C.4. PAGE_____OF_____ Field

The PAGE_____OF_____ field provides for accounting of the pages (or forms) which comprise the abstract.

Each abstract will have a PAGE_____OF_____ field on the first page and on continuation pages, if any. The number'1' is imprinted in the 'PAGE' subfield of the first page form. The accounting information is entered into the field

as two numbers (each having as many digits as necessary): the number in the left portion of the field will represent the page in hand as one of a group of pages making up the abstract; the number in the right portion of the field will represent the total number of pages of the abstract, the number being identical on the first page and all continuation pages, if any.

Examples:

(1) Abstract comprising one page

PAGE 1 OF 1

(2) Abstract comprising three pages

PAGE 1 OF 3 (first page)

PAGE 2 OF 3 (second page)

PAGE 3 OF 3 (last page)

The PAGE_____OF_____ field must always be filled on the first page and on any continuation pages of the abstract.

C.5. NIOSH NUMBER Field

The NIOSH NUMBER field provides for identification of the document in the search file.

Each abstract will have a NIOSH NUMBER field on the first page and on continuation pages, if any. The information in the field will be the imprinted word 'NIOSH' and an 8-digit number, with zero fill to the left (see example, page III-39), copies by the abstracter from the document.

Each document that is abstracted must have a unique, permanent NIOSH control number which must be preassigned to the document and only to that document by the Document Control Manager (who assigns the NIOSH number to the library file). The NIOSH number for the document must be copied identically to the microfiche or other copy of the document and to the first page and any continuation pages of the abstract.

A document must not be abstracted unless a NIOSH control number is assigned. If a document is submitted for abstracting and does not carry a NIOSH control number, the abstracter must obtain the necessary NIOSH control number from the Document Control Manager before attempting to abstract the document.

If the abstracter discovers that the same NIOSH control number has been assigned to two or more documents, the abstracter must take all such documents to the Document Control Manager. A new, unique NIOSH number will be assigned to each document which bears the duplicated number.

When a collective document, such as a collection of papers from a symposium, is subdivided to produce multiple documents, e.g., the collection being divided into individual papers that will be abstracted separately, each such document produced is an entity, separate and distinct from the collection and from each other. (See NOTE 1, page III-39; see also C.8, page III-45.) Each document must have its unique NIOSH number. The original NIOSH number assigned to the collective document is used for the abstract which represents the collection. The abstract for each individual document must carry the unique NIOSH number assigned to that individual document. Before abstracting such documents, the abstracter must take

the documents to the Document Control Manager, in which case, a unique NIOSH number will be assigned to each document that will be abstracted.

In some cases, as with periodicals containing various articles, the collective document may be subdivided to form multiple documents, with an abstract to be produced for each individual document, but with no abstract to be produced for the collective document. Each individual document must be assigned a unique NIOSH number, with that NIOSH number being assigned to the abstract for the document. Since the collective document will not be abstracted, no NIOSH number is assigned to the collective document; that is, the NIOSH number which has been preassigned to the collective document is removed from the collective document, and may be used for another document, possibly the first individual document from the collective document. In such cases, the abstracter must take the collective document to the Document Control Manager so that the NIOSH number can be reassigned. No NIOSH number should be assigned or reassigned to any document by the abstracter: The NIOSH number assignment must be made only by the Document Control Manager. (See NOTE 1, page III-39.)

For reports, articles, and other documents in printed (hard copy) form, the NIOSH control number information which is to be used by the abstracter will be found on the first page or the cover of the document. For documents received by the abstracter in microfiche form, the NIOSH control number information will be found on the microfiche jacket. (See NOTE 3, page III-39.) For other forms of documents, such as microfilm, the abstracter will be apprised of where and how to find the applicable NIOSH control number information.

Examples:

(1) '197' appearing on microfiche jacket:

NIOSH NUMBER: NIOSH00000197

(2) '1900' appearing on first page of document; abstract comprising two pages:

NIOSH NUMBER: NIOSH00001900 (PAGE 1 OF 2)

NIOSH NUMBER: NIOSH00001900 (PAGE 2 OF 2)

NOTE 1: The abstracts supervisor will make the decision for abstracting a collective document as one document, or as multiple documents, based upon whether the individual documents are identifiable entities. When the abstracter finds that a document may contain identifiable documents which may be abstracted separately, the abstracter should take the collective document to the abstracts supervisor to obtain the decision for abstracting the document(s).

NOTE 2: In some cases, a collective document may be found on one set of microfiche. The NIOSH number for each individual document subdivided from the collective document is entered on the microfiche jacket.

NOTE 3: Since the NIOSH control number information, which identifies documents in microfiche form, is written on the microfiche jacket, rather than on the microfiche itself, the abstracter must take care in returning the microfiche to its proper identifying jacket.

The NIOSH NUMBER field must be filled on the first page and on all continuation pages of each abstract.

C.6. ACCESSION NUMBER Field

The ACCESSION NUMBER field provides for identification of the document in the library file of the information system from which the document was generated or disseminated.

Each abstract will have an ACCESSION NUMBER field on the first page of the abstract. The information which is entered into the field will be alphanumeric. The entry is called the abstract accession number and requires both a source identifier and a document accession number to be complete. The source identifier will precede the document accession number in the field, with a space for separation. Upper case letters will be used for all letters in the entry. The abstract accession number is determined as specified below, with the document accession number being copied exactly as appearing on the document. No other information or punctuation is needed or desired in the field.

The principal sources will be identified in the ACCESSION NUMBER field:

National Technical Information Services, which has the source identifier, NTIS

International Occupational Safety and Health Information Center, which has the source identifier, CIS

The NIOSH libraries and reference rooms, which are the prime sources for all documents in the system, will not be identified in the ACCESSION NUMBER field, unless otherwise specified.

Some documents will not show an identifiable source library or information system. Such documents will be presumed to have the NIOSH libraries as the source, in which case the ACCESSION NUMBER field is left blank, unless otherwise specified.

Additional document sources are expected to be used in the system, and the appropriate identifiers will be given for use in the ACCESSION NUMBER field as the sources are developed. Until other source identifiers are specified, no source identifiers except 'NTIS' or 'CIS' can be used unless the abstracter is so directed by the person responsible for the abstracting.

Documents which use the NTIS source identifier are usually on microfiche (see Example 1), with the letters 'NTIS' on the microfiche jacket; however, some NTIS documents may be in hard copy form. In either case, the words 'National Technical Information Service' will be on the document, itself.

Documents which use the CIS identifier may be on microfiche, in which case, the CIS identification is made on the microfiche jacket; or the document may be in hard copy form, in which case, the CIS identification is written on the cover or first page of the document as a CIS (document) accession number. The handwritten CIS number is always preceded by 'CIS' and is usually underlined or circled in colored ink. In some cases, CIS documents, particularly hard copies, may carry additional accession numbers which have been generated by previous information sources (see Example 2). In such cases, the abstracter must use only the accession number indicated as the CIS accession number: no other accession number may be used. When the abstracter has difficulty in finding an accession number, or, in the case of multiple accession numbers,

deciding which accession number should be used on the abstract, the abstracter should consult a knowledgeable person or his supervisor for help in the determination.

NOTE: The accession number is generated as part of an information system by a library or information service to identify the document together with the originator of the document. For example, 'JPRS 52274' on an NTIS-disseminated document indicates that the document was generated by Joint Publications Research Service and has the serial number '52274'. It is not necessary to know what the accession number means or stands for, with the exception that such information might be helpful in the case of some documents in determining who is the publisher; e.g., the accession number 'AD 722 733' would indicate that an agency of the Defense Department generated the document. It is important, however, to enter the accession number into the abstract, if the number exists.

Examples:

(1) Microfiche with PB 234 165 in upper left corner, NTIS on jacket:
ACCESSION NUMBER NTIS PB 234 165

(2) Hard copy with the numbers PB 234 165 and (handwritten) CIS 234 1972:
ACCESSION NUMBER CIS 234 1972

The ACCESSION NUMBER field must always be filled when an accession number is available.

C.7. NIOSH SOURCE Field

The NIOSH SOURCE field provides for identification of documents generated through NIOSH or NIOSH-sponsored research.

Each abstract will have a NIOSH SOURCE field on the first page of the abstract. The information which will be entered into the field will be alphanumeric, and will be a NIOSH source identifier consisting of a lower case letter, 'a', 'b', or 'c' designating a document source, as specified below; or a lower case letter, 'd' or 'e', followed by a hyphen and a NIOSH contract number or grant number, as specified below. The contract number or grant number is entered into the field exactly as found on the document, with indicated spacing and capitalization. No other information or punctuation in the field is necessary or desired.

The NIOSH source identifier is used for documents written by NIOSH personnel, solely or jointly with persons from other organizations, or by persons working under sponsorship of NIOSH, whether or not the document is published by NIOSH. Most documents for the NIOSH-1 file have not been generated by NIOSH personnel or under NIOSH sponsorship, and will not require a NIOSH source identifier; for such documents, the NIOSH SOURCE field is left blank.

The NIOSH source identifiers are as follows:

a. Document by NIOSH personnel for non-NIOSH-generated publication or presentation.

b. Unpublished document by NIOSH or NIOSH personnel.

c. Document published by NIOSH.

d. (Plus contract number) Document published under NIOSH contract.

e. (Plus grant number) Document published under NIOSH grant.

Other source identifiers may be generated as the NIOSH-1 file is developed. Until such identifiers are made a part of the system, no other source identifiers may be used unless the abstracter is specifically instructed by the abstracting supervisor.

The reference for documents with NIOSH source identifiers will be constructed in the same way as for documents without such identifiers (see C.10, page III-58): the REFERENCE field is not influenced by the source identifier.

The abstracter is responsible for identifying NIOSH or NIOSH-sponsored documents. Some documents may carry the source in the bibliography or acknowledgement; other documents may show the NIOSH relation in the author affiliation, which the abstracter should note; the Document Control Manager may assign such information in some cases.

Some documents may not carry the words 'NIOSH' or 'National Institute for Occupational Safety and Health.' Documents with agency names such as 'Bureau of Occupational Safety and Health' or 'Branch of Occupational Safety and Health' are considered to be NIOSH source documents. Documents which carry the names 'Health Services and Mental Health Administration' or 'HSMHA,' 'Public Health Service' or 'PHS,' or 'Department of Health, Education, and Welfare' or 'HEW' are considered to be NIOSH source documents if the abstracter can determine that the documents are from NIOSH or NIOSH personnel. As the abstracter becomes more familiar with documents in the system, keys may be established for

determining NIOSH source documents on such bases as known NIOSH authors and operations. The abstracter is cautioned, however, not to ascribe a NIOSH relationship when no such relationship exists.

If the abstracter has difficulty in determining what the NIOSH source identifiers for a document should be, the abstracter should consult a knowledgeable person or the abstracts supervisor to find out the NIOSH source information.

When a document is indicated as being published through a contract or grant, and no contract or grant number is given, the appropriate NIOSH source indentifier is entered into the NIOSH SOURCE field as the NIOSH source identifier.

Examples:

(1) Article written by NIOSH scientist for a non-NIOSH journal:

NIOSH SOURCE a

(2) Report generated for project under NIOSH grant number, GR123456:

NIOSH SOURCE e-GR123456

(3) Report generated under NIOSH contract, no contract number given:

NIOSH SOURCE d

The NIOSH SOURCE field must always be filled on the first page of the abstract when a NIOSH source can be determined.

C.8. TITLE Field

The TITLE field provides for identification of the document on the basis of the document title as a unique, distinguishable document in the NIOSH-1 file.

Each abstract will have a TITLE field on the first page of the abstract. The information which is entered into the field will be alphanumeric and will be the actual entire title of the document, including punctuation, which is being abstracted. The information is entered into the TITLE field exactly as found on the document, using capitalization as indicated. No other information or punctuation in the field is necessary or desired.

Each document for the NIOSH-1 file must have a title which identifies the document before the document can be abstracted. The abstracter is responsible for making sure that each document is properly identified through the title on the abstract. If a document is assigned for abstracting, and the title information is missing, incomplete, or cannot be determined, the abstracter must return the document to the Document Control Manager who is responsible for obtaining the title information for the document.

The title must refer to one document only, as a distinct entity, and to no other document or part of a document. In this light, the following precepts must be observed in determining the title for a document:

1) A book or other collective document which contains other documents can be abstracted as one document covering all of the other documents in the entire unit, as long as the title for the entire unit is used. For example, the proceedings of a conference in which individual papers are presented can be abstracted as one document for the entire proceedings. In this case, the title of the document and the resultant abstract is the title of the proceedings.

2) Documents contained in other collective documents, such as papers in proceedings or articles in a journal, can be abstracted as individual documents, whether or not already covered by an abstract for the collective document, as long as each document abstracted is a distinct entity, with an identifying title (see NOTE 1 above). In such cases, the title of each abstracted document is the title of the individual document rather than the title of the collective document from which the abstracted document is taken. For example, a book entitled, "Problems of High Temperature Environments," containing technical papers, would generate an abstract bearing the title given for the book; a paper in the book entitled, "Effects of Long-Time Exposure to Heat on Workers," would generate the abstract bearing the title, "The Effects of Long-Time Exposure to Heat on Workers," rather than, "Problems of High Temperature Environments" (which information should go into the reference (see C.10, page III-58)).

3) The title of the document being abstracted must be entered into the TITLE field in English.

Titles of documents in foreign languages must be translated into English, by the abstracter or through assistance of the abstracting supervisor, before the documents can be abstracted.

When foreign language titles are translated, the language of the document is indicated as the last word, in parentheses, of the TEXT field (see C.13, page III-80). The foreign language title is not carried in the TITLE field or elsewhere in the abstract. These provisions are not required for the name or language of a collective document from which

such documents are abstracted, such name being carried as given in the REFERENCE field (see C.10, page III-58), and the language of the collective publication not being germane to the abstracted document.

For example, the title for the German language article, "Inspektion des Kraftfahrzeugs," in the French language journal, "Comptes Rendus," or the English language publication, "Industrial Hygiene," should be entered into the TITLE field as "Inspection of Motor Vehicles." The language of the article would be entered into the TEXT field as "(German)."

The title of a document which has British spelling is entered into the TITLE field with British spellings. However, British spelling should not be used in the TEXT field of the abstract. For example, "Discolouraticns Caused by Utilisation of Sulphur Compounds", would be entered into the TITLE field for a document with this spelling; however, 'discolorations' 'utilization' and 'sulfur' would be proper spellings in the TEXT field, if the terms were used.

4) The full title of the abstracted document must be entered into the TITLE field of the abstract. In some cases, as in microfiche legends, the document title may be truncated or altered for economy of space. In such cases, the full title of the document must be copied from the document itself as may be seen on the first page or cover, either on the microfiche reader screen or hard copy print. For example, the title in the microfiche legend as "Carcinogenic Effects of the Aromatic Compounds, Methylamine, etc.", should be entered into the TITLE field as "Carcinogenic Effects

of the Aromatic Compounds, Methylamine, Diphenylamine, Phenaphthalene, and Ethylamine," if such were the case.

In the rare case that the document title is longer than 255 characters, the abstracter should terminate the title in the TITLE field on the last full word before the 255 character limit, enter the word 'truncated' in parentheses in the TITLE field, and continue the title, after the entry of the word 'title' in parentheses, in the TEXT field (see Note 2, page III- 52; see also C.13, page III-80).

5) All parts of a multiple-part title, including the indicated punctuation, must be entered into the TITLE field of the abstract: A title entry which does not comprise the complete title is unacceptable, as the identity of the document might be compromised.

The multiple-part title is generally used for added identification or clarification when the root part of the title is insufficient for distinction or is unclear. The multiple-part title may usually be distinguished from a title with subtitles in that the parts of the multiple-part title seldom stand alone, whereas the title in the title/subtitle is an entity. The multiple-part title usually contains punctuation, with the initial part. For example:

Effects of Carbon Monoxide Poisoning--A Study of Environmental Pollution

However, the multiple-part title may sometimes not contain punctuation; for example:

Carcinogenic Activity	(The common title of a group of documents)
Part I: Blood Chemical Changes	(The distinctive title of a specific document of the group)

No punctuation other than the punctuation occurring in the title in the document should be used in the abstract title. If no punctuation is used in the document title, as in the second example above, the multiple-part title should be entered into the TITLE field with the parts of the title on separate lines (tier fashion).

In determining whether a multiple-part title or a title/subtitle construction is used for a document, when definite connection is not shown through punctuation, the abstracter must determine whether each component of the information is a logical, intended part of the document title. Only the document title can be entered into the TITLE field.

The truncation rule cited in the previous paragraph (4) applies for multiple-part titles which are longer than 255 characters.

6) Subtitles, section and paragraph headings, and subheadings are not a part of the title, and should not be included in the TITLE field, whether such devices explain or extend the title. Where a document has a second title, given to clarify or extend the first title, the second title is considered to be a subtitle and not a part of the title of the document. Again, the

chief distinction for the title/subtitle construction, as opposed to the multiple-part title, is that the subtitle is not explicitly or implicitly a part of the title.

Examples of the title/subtitle constructions are (using the previous multiple-part title examples):

Effects of Carbon Monoxide Poisoning (Title of a Document)

A Study of Environmental Pollution (second title; no connecting punctuation; no implication as part of first title)

and

Carcinogenic Activity (the title of a document)

Part I: Blood Chemical Changes (subtitle for part of the document).

Only the title should be entered into the TITLE field. The subtitle, heading, or subheading should not be joined to the title by any form of punctuation and entered into the title citation; otherwise, the title citation would be false. The information of the subtitles, headings, and subheadings should be carried in the body of the abstract. Such information need not be a word-for-word transliteration, but should carry the intended information.

In some cases, a title might not be indicative of the contents of a document, and an explanatory note might be appended to the title for clarification by someone other than the author. Such appendages are not considered to be a part of the title no matter how clear they make the document contents. The abstracter must keep in mind that the title is used to identify, rather

than explain, the document in the abstracting process. Any title other than the exact title is a false identification of the document.

Other precepts concerning the title will be advanced to the abstracter by knowledgeable persons during the abstracting of documents. The abstracter is expected to make logical decisions and to use good judgment in handling document titles.

Examples:

1) Microfiche, bearing legend: A Study of Toxicological Effects of Carbon Monoxide, Carbon Dioxide, Etc.

   TITLE A Study of Toxicological Effects of Carbon Monoxide, Carbon Dioxide, and Other Respirable Gases (as appearing on hard copy)

2) Article, entitled: Kraftstoff aus Aromatischen Bestandteilen

   TITLE Aromatic Fuels

3) Report, entitled: Assay of Pesticide Residual Toxicity. 2. Dieldrin

   TITLE Assay of Pesticide Residual Toxicity. 2. Dieldrin

NOTE 1: Not only the title, but other factors may also determine whether a document is an identifiable entity, such as authors (C.2) and references (C.10).

NOTE 2: A constraint of the DOC PROC system, which is used by the computer for processing and retrieving the abstracts, is that a field of the bibliography of the abstract (see C.5 through C.12) may not exceed 255 characters, fields in excess of this limit causing the abstract to be rejected by the system.

The TITLE field must always be filled on the first page of the abstract.

C.9. AUTHOR(S) Field

The AUTHOR(S) field provides for identification of the person(s) who generated the document which is to be abstracted.

Each abstract will have an AUTHOR(S) field on the first page of the abstract. The information that is entered into the field will be alphanumeric and will specify the name(s) of the author(s) of the document.

The author of a document is the person who wrote or generated the document. Authorship of a document can be implied or expressed in the document. Sometimes, it is necessary to make an interpretation or judgment as to who is the actual author, particularly when different sets of names are given, as for some books or technical papers. For many technical reports, usually from government agencies, but also from companies and institutions, the names of department or agency heads, committee officers, contracting officers, or other persons who are responsible for generation or publication of the documents are listed on the cover sheet or elsewhere in the reports. Such persons are generally not the authors of the documents. In many such cases, the name(s) of the author(s) can be seen after the words 'prepared by,' 'by,' or some such indicator.

A document need not show an author as a requisite for abstracting. When the name of a person is given as author of a document, however, the name must be entered into the AUTHOR(S) field of the abstract. Most documents that will be abstracted for the NIOSH-1 file will have designated authors; some documents may give none of these.

The abstracter is responsible for determining whether the name is given and what the name is. The author information will be entered into the field exactly as given in the document, according to the rules set forth below, with appropriate initial capitalization and indicated punctuation. No other information or punctuation in the field is necessary or desired.

The names of corporate authors are not entered into the AUTHOR(S) field: Only the name of persons can be entered into the field. The names of corporate authors when used can be entered only in the REFERENCE field (see Note 1). If no person is given as author, the AUTHOR(S) field is left blank.

When there is one author for a document, the name of the author is inverted and is entered into the AUTHOR(S) field in the order:

last name, comma (,), space, first initial, period (.), space, second initial (if given), period.

Additional initials may be listed in the same format (see Example 1, page III-56).

When there is more than one author for a document, the name of the first author listed will be inverted and entered in the AUTHOR(S) field in the above order with a following comma; the name(s) of additional author(s) will then be listed straightforwardly, as given, with appropriate spacing and punctuation, using commas for separation, and preceding the name of the last author by 'and'. (See Examples 2 and 3; see also NOTE 1.) The format for entering the name of multiple authors can be seen as:

(first author) last name, comma, space, first initial, period, space, second initial, period, comma, space, (second author) first initial, period, space, second initial, period, space, last name, comma, 'and' (last author) first initial, period, space, second initial, period, space, last name

Given (first and middle) names of authors are not entered into the AUTHOR(S) field: the initial letters of the names are used. (See NOTE 2, page III-57)

Appendages to surnames, such as 'Jr.', 'Sr.', or 'III', are considered to be part of the name and are included in the AUTHOR(S) field. The appendage follows the last given name, if the author name is inverted, or the surname if the author name is not inverted, using a comma and space separation for either case. For example:

Jones, M. F., Sr., and A. B. Trimble, Jr.

Titles, academic degrees, and other such appendages, such as 'Dr.', 'Ms.', 'Ph. D.', 'M. D.', or 'Director', are not considered to be a part of the name, and are not included in the AUTHOR(S) field.

The editor of a book, unless another author is specified, is considered to be the author of the book. The editor should be indicated as such, however, by the abbreviation 'Ed.', with comma separation and preceded by a space, after the editor's name in the AUTHOR(S) field.

The editor of a book or document which is a collection of other documents that have a central theme or themes, such as conference proceedings, is the author of the collective document, whether or not the editor expounds on the theme. The

persons who contribute the individual documents in the collection are the authors of the individual documents. When preparing the abstract for the collection, such preparation being necessary because of the central theme of the collection, the name of the editor is entered in the AUTHOR(S) field. When preparing abstracts for the individual documents of the collection, the names of the authors of such documents are entered in the AUTHOR(S) field, as applicable; and the name of the editor of the collection, if available, is included in the REFERENCE field (see C.10, page III-58).

The editor or a member of the editorial staff for a journal, or other such publication which contains a collection of documents but which does not have a central theme, is not the author of the collection, or of any part of the collection (unless specified as the author of an individual document in the collection).

The translator of a document from a foreign language is not the author of the document unless so specified: The original writer of the document which has since been translated is the author of the document. If no original author is given and the translator is not identified as the author, the AUTHOR(S) field is left blank.

When a document is a review or discussion of another document, the author who makes the review or discussion is the author of the document that is being abstracted. The author of the document that is being reviewed or discussed should be mentioned in the abstract text.

The writers of portions of a document which cannot be identified as entities, such as untitled chapters in a book, and which therefore cannot be abstracted, are not the authors of the entire document, unless so specified. If such authorship is not specified, the editor or person responsible for generation of the entire document is considered to be the author.

Examples:

(1) Single author

AUTHOR(S) Vilanilam, J. C.

(2) Two authors

AUTHOR(S) Pustilnik, J., and T. Linietski

(3) Multiple authors

AUTHOR(S) Lange, L., M. Fishman, M. Tate, and B. J. Johnson

(4) Authors with appendages to names

AUTHOR(S) Jackson, C. H., Jr., and E. V. Patrick, III

NOTE 1: The AUTHOR(S) citation should not contain two 'and's'. The construction:

Wachter, P., and P. Saalman, and D. Kollias

is incorrect.

The construction should be:

Wachter, P., P. Saalman, and D. Kollias

NOTE 2: The initial for the name of some Slavic language authors, particulary Russian, may be two letters, as 'Kh.,' which has no equivalent in English, the two letters thus being entered into the abstract.

The AUTHOR(S) field is filled on the first page of the abstract when a human author is given for the document.

C.10. REFERENCE Field

The REFERENCE field provides for identification of the publication or presentation source, description of the publication or presentation circumstances of the document, and certain information descriptive of the document itself.

Each abstract has a REFERENCE field on the first page of the abstract. The information that is entered into the field will be alphanumeric and will be in relatively free form within a general format, comprising different sets of information according to the document which is being abstracted. The information sets will be entered into the field with appropriate, standard punctuation as found in normal bibliographic citations, indicated capitalization of letters, and in acceptable characters, using commas to separate information sets and a period to terminate the field. In rare cases, where necessary, a semicolon may be used to separate compound information sets from other information.

Each document for the NIOSH-1 file must have a complete reference citation which identifies and describes the document before the document can be abstracted. The abstracter is responsible for making sure that a valid reference is made to a document through the reference citation on the abstract. If a document is assigned for abstracting and the reference information is missing or cannot be determined, the abstracter must return the document to the Document Control Manager for the needed information or for disposition of the document.

The reference is always to the actual document being abstracted as a distinct, identifiable entity. The reference cannot refer to both the document being abstracted and another document.

A collective document such as a book or journal can be cited as an identifiable entity containing all of the documents in the collection. The name of the collective document is the title of the abstract and the publication information makes up the reference.

The individual identifiable documents in a collective document may be cited as entities on the basis of the identity of the collection. In such cases, the names of the individual documents are the titles of the corresponding abstracts; the name of the collective document is the reference common to the individual documents.

The reference on the abstract must contain all of the pertinent information needed, with the title (and author, if given), to locate a document in the NIOSH-1 library file. The reference must be accurate so that the document indicated in the reference can be found and is the document abstracted. Incomplete or misleading information may cause the desired document to be missed in a search, or cause the wrong document to be found.

The reference is made on the basis that the document which is being abstracted is a unique, permanent, final publication with identifiable characteristics. A change in the identification characteristics of a document, such as volume and issue number for a continuously published journal, generates a new document. An unpublished document, such as a committee report or a preprinted document,

is treated as a published document; a reprinted document is cited according to the source given. Documents are referenced by the actual name of the documents in the language published. Translations of documents are referred to in terms of the English language translation.

General formats for the reference are the publisher-oriented format for documents that are published only once with no change in identifiable characteristics and the publication-oriented format for documents that are published through change in identifiable characteristics (and contents). Either format is used where applicable and may be combined where necessary to make the proper document reference. In most cases, the REFERENCE field will require more information than immediately apparent in the formats shown, to the level of specificity required by the system or as dictated by the document (see B.5, page III-22).

The **publisher-oriented** format is:

Publisher, place, number of pages, number of references

Other relevant information may be incorporated into the format for such references as:

Corporate author, place; sponsoring agency, place, report number, pages, number of references

or

Publisher, place, edition, volume number, number of pages, number of references

The publication-oriented format is:

Publication, serial number, volume number, issue number, pagination, number of references

Other relevant information may be incorporated into the format, for such references as:

Publication, publisher, place, volume number, issue number, pagination, number of references

or

Publication, publisher (Reprinted from.....), place, volume number, issue number, number of pages, number of references

To facilitate computer searching and to assure a consistent, logical output format for the abstract, some conventions have been developed for abstracting the information for the REFERENCE field.

The abstracter is expected to be knowledgeable of, and to use, such conventions. No conventions except the conventions given in this guide may be used by the abstracter unless specifically directed by the abstracting supervisor.

Some documents will provide information that will not fall conveniently into the formats presented here. For example, some journals may use serial numbers only, volume and issue numbers only, issue number only, or any combination, or none of these. Some information, such as acknowledgments, may require special handling for different documents.

The date of publication or presentation of the document is not entered into the REFERENCE field, but is entered into the PUBLICATION DATE field (see C.11,

page III-74), for the abstract. If a document were presented at a conference or similar situation, the date(s) of the conference would be entered into the REFERENCE field, and the date of presentation of the document (which might be the same date) would be entered into the PUBLICATION DATE field.

The date a document is submitted, received, or accepted is not entered into the REFERENCE field, but is entered in the SUMBISSION DATE field (see C.12, page III-78).

The number of pages which comprise the document, or the pagination of the abstracted document in a cited collective document, whichever is applicable, must always be cited in the REFERENCE field - as the last entry when no citations are given in the documents or as the next-to-last entry when such references are given (see Examples 1 and 10).

The number of references (or footnotes) cited in the document must be cited in the REFERENCE field, as the last entry, whenever such references are made (see Example 1). If no references are cited, the entry is omitted (see Example 11). 'No references' is entered in the field only when a document indicates that references are made, such as on the cover sheet of a technical report, and the indicated citations are not made in the document (see Example 2).

The needed reference information for the abstract may generally be found on the cover or transmittal sheet of technical reports generated for or by the government, but may be found on the cover, first page, inside pages, or last pages of most documents. Some of the information might be in varying degrees of completeness, or might be omitted from a document. Some of the information might be cited incorrectly in the document or on the cover sheet.

The abstracter must gather the information for reference of a document and must decide what information is pertinent. Before writing the text of the abstract, the abstracter must determine whether the information is present for making a complete and useable reference and must ensure that the reference information is cited correctly in the REFERENCE field of the abstract. The abstracter should try at all times to glean the necessary reference information from the document in hand. Failing in this, the abstracter should use other information sources as available. In some cases, particularly for microfiche or Xerox copies of articles from journals, and for acronyms and abbreviated journal names, the proper reference might be made by finding the original document through reference, directory, or bibliographic sources in the library. As a final resort, the abstracter should consult the abstracting supervisor to determine what the reference citation should be (and consequently, whether the document can be abstracted).

Some general and specific guidelines are given below, which must be interpreted and followed consistently by all abstracters.

1) Document Name/Publisher

The general practice for making a reference is to list the name of the document and the publisher if the document is published once, but to give the name of the document and omit the name of the publisher if the document is published on a periodical or continuing basis. Documents such as books, reports, and technical papers are published once, however many times they may be reprinted in new editions. For such documents the name of the document and the name of publisher are used, with other

relevant information such as place of publication, edition, or report number (see Example 1). Documents such as magazines, newspapers, journals, or registers are published periodically. For such publications, the document name is used without the name of the publisher (unless necessary for clarification) and with other relevant information such as volume and issue number (see Example 4). For some published translations of documents, the original name of the document is cited with the publisher of the translation (see Paragraph 3; see also Examples 6 and 7).

2) Pagination

A document which is a component of a collective document is cited on the basis of the pagination of the collective document. For example, the citation for a paper comprising the 10 pages '333' through '342' of a conference proceedings of greater length would be 'pages 333-342' (see Example 2).

A document which is not a component of a collective document is cited on the basis of number of pages, regardless of pagination. For example, a report with the pagination 'i' through 'iv' and '1' through '20' would be cited as '24 pages' (see Example 1).

Some journals use a form of double pagination, one set being for the issue, and the other set being for the volume of which the issue is a part. For example, an article may carry page numbers of 12-20 for issue number 4 of volume 24 and, at the same time, have page numbers 222-230 relating to the pages published in volume 24. Both sets of pagination are carried in the REFERENCE field, with separation by a slash, the entry being in the example, 12-20/222-230 (see Example 4).

In some published translations, the document in the original language may have been a part of another document, but is presented in the translation as a separate unit with new pagination. For example, an article from Vol. 34, No. 2 of 'Stal', pages 848-860, may be published in the translation simply as pages '1-12' under the title of the article, rather than under the title of the collective document, and with no volume or issue number. The citation for the example would be '12 pages' (see Example 5).

3) Translations

When a document is published as a translation, the reference is cited as given in the translation rather than as in the original. The rule applies for document name; serial, volume, and issue numbers; pagination; or other information which has been changed from the original. Some translations may be published with a completely translated reference. For example, an article published in "Hygiene and Sanitation, Vol. 21, No. 5, pages 5-7", may have been translated from 'Gigiena i Sanitariya, Vol. 35, No. 4, pages 8-10' (see Example 6). Other translations may carry partially translated references. For example, an article from 'Comptes Rendus, Vol. 30, No. 4' may be published in the translation Comptes Rendus, Vol. 3, No. 2' (see Example 7). For all documents, the reference is cited in terms of the document in hand.

The original name, and all relevant information, for the cited document is carried in parentheses next to the name of the publisher of the translation. The original name must not be cited after the translated name unless the names were published in this arrangement (see Note below). For

example, the citation for the publisher of the above article published in 'Hygiene and Sanitation' by the National Science Foundation would be 'National Science Foundation (Gigiena i Sanitariya, Vol. 35, No. 4, pages 8-10). (See Examples 6 and 7.)

NOTE: This convention is adopted to prevent confusion of search strategy when searching on document titles. If a document were published as 'Hygiene and Sanitation', 'Hygiene and Sanitation (Gigiena i Sanitariya)' would be a false citation.

4) Publisher Subdivisions

Any cited subdivisions of the publisher are listed in the order smallest to largest, the same holding true for location or place of publishing. For example, a citation for a NIOSH publication might be:

National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare, Cincinnati, Ohio,

or

Office of Research and Standards Development, National Institute for Occupational Safety and Health, Public Health Service, U.S. Department of Health, Education, and Welfare, (etc.).

to the given level of specifity (see Examples 2 and 8).

5) Place of Publication

The place of publication is cited for documents which are published once, but is omitted for periodical publications. One known place of publication of the document in hand is cited. For example, a book published by

McGraw-Hill Company might list offices in London, New York, and Ontario. A United States copyright could indicate 'New York' as the citation.

The installations at which some large agencies are located can be considered to be citable place names. For example, Wright-Patterson Air Force Base at Dayton, Ohio, can be cited as 'Wright-Patterson Air Force Base, Ohio' (see Example 1).

Unless necessary for distinction, the location may be omitted for some organizations, particularly government agencies in national capitals. For example, the Department of the Army may be presumed to be in Washington, D.C.; the place name is omitted. However, a division or branch of the Army, or other organization, is best cited in conjunction with a location. In this light, the city of publication for a NIOSH document might not be cited, unless the need exists for citing the Cincinnati, Ohio, site rather than the Rockville, Maryland, site.

6) Corporate Authors

Some documents will have corporate authors. (A 'corporate author' here means an agency, university department, company, laboratory facility, or some such organization which generates a document, usually as a result of some work performed.) Where documents do not list human authors, the corporate author information is important for indicating the agency or organization which generated the document; otherwise, the corporate author is unnecessary. The corporate author is the first entry in the

REFERENCE field (see Example 8), when cited, followed by the editor, if given, and the publisher of the document, in that order, as applicable (see Example 14).

7) Unknown Publisher

When a publisher or issuing agency is not listed for a document, the sponsoring agency, or corporate author, in that order, may be cited as the publisher. For example, a document generated by George Washington University, as corporate author, under sponsorship of the National Library of Medicine, would be cited, 'National Library of Medicine'. If none of the above are listed, the affiliation of the author (which is otherwise not used in the REFERENCE field citation) can be considered to be a corporate author and the publisher (see Example 8).

8) Series

Some documents may be published as parts of series, with or without human or corporate authors; e.g., an article entitled, "Silicosis in Iron Workers", as one of a series called, "Industrial Respiratory Disorders", and having as corporate author the American Iron and Steel Institute. In such cases, the series identification and the corporate author are entered into the REFERENCE field, whether there is a human author (whose name, if given, would be entered into the AUTHOR(S) field), with the name of the series as the first part of the corporate name. The corporate author is separated from the series name by a comma, and the corporate name is separated from the rest of the REFERENCE field by a semicolon.

For the example, the entry would be:

REFERENCE Industrial Respiratory Disorders, American Iron and Steel Institute; (and the remainder of the citation (see Example 10))

When no corporate author is given, the series name is entered into the REFERENCE field as if a corporate name were being entered, using a comma for separation from the rest of the field (see Example 11).

9) Conference Proceedings

When a document which has been presented at a conference or similar situation is published as part of or the entirety of a proceedings or similar publication, the company or agency which published the book, or the organization which sponsored the meeting, in that order, is the publisher; if such information is not available, the conference or meeting, itself, can be considered to be the publisher (see Examples 12 and 13). The information concerning the presentation of the paper is cited following the publishing agency or following the report number if the document is a government report (see Examples 2 and 13).

10) Reprints

When a reprint document is a reprographic, photographic, or other identical copy of a document, the citation for the reprint is made exactly as if the reprint were the original document. If a document is reprinted in another document, the reference is cited as given in the document which contains the reprint, as is the case with translations (see Paragraph 3; see also Example 3), with the citation for the original made

next to the publication or publisher as applicable. For example an article which appeared in "Industrial Hygiene", Vol. 2, No. 3, pages 8-10, might be reprinted in "Industrial Engineering", Vol. 5, No. 6, pages 12-14; the citation should read:

REFERENCE Industrial Engineering (Reprinted from Industrial Hygiene, Vol. 2, No. 3, pages 8-10), Vol. 5, No. 6, pages 12-14

11) Unpublished Documents

An unpublished document, such as a preprinted article, dissertation, or report is cited in the same manner as if the document were published, but with indication of the status as 'unpublished' or 'preprint' parenthetically after the publisher. The corporate author or the personal author, in that order, is cited as the publisher, with the address being included (see Example 9). Neither the circumstances of publication nor the document in which the abstracted document will be published determines the identification of the publisher or publication; however, such information is carried parenthetically, with the status information, after the above determined publisher.

12) Report Numbers, Contract Numbers, Grant Numbers

The report number for a document, when given, must be entered into the REFERENCE field after the publisher, or publisher and location, if used. The report number is entered into the field with the words, 'Report no.' (see Example 2).

Contract numbers and grant numbers are used in the REFERENCE field if such numbers are report numbers or if report numbers are not given. The entries must be identified by 'Contract No.' or 'Grant No.' (see Example 1). (For NIOSH-generated documents, the contract or grant number would also be entered, with the appropriate source designator, in the NIOSH SOURCE field (see C.7, page III-43).)

Some documents may not specify report numbers as such; however, some report numbers can be determined by the way in which the numbers are used or by the nature of the document. For example, a document with the legend, 'Publication No. 29 Under Contract No. 303', should be considered to have a report number, generating the citation, 'Report No. 29'.

13) Abbreviations and Acronyms

With the possible exception of names of states in the United States, and the label, 'United States', in the name of government agencies and organizations, no abbreviations (except as indicated in these guidelines) or acronyms may be used in the REFERENCE field; however, an acronym which is a part of a report or contract number may be used in the field (see Examples 1 and 2).

In citing pages and references, the words, 'page', 'pages', and 'references' are always spelled out.

Other guidelines, rules, prescripts, conventions, as developed, will be made known to the abstracter by the abstracts supervisor.

Examples:

1. Technical report

   REFERENCE Aerospace Medical Research Laboratory, Aerospace Division, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, Report No. AMLR-TR-70-100, 89 pages, 30 references

2. Technical report, also conference proceedings, published by sponsoring organization

   REFERENCE Aerospace Medical Research Laboratory, Aerospace Division, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, Report No. AMLR-TR-70-102 (Proceedings of the First Annual Conference on Environmental Toxicology, Fairborn, Ohio, September 9-11, 1970), pages 309-325, no references

3. Technical report, also reprint

   REFERENCE Physiological Adjustments of Men to Work and Heat, Appendix I (Reprint, Journal of Applied Physiology, Vol. 31, No. 1, pages 63-69, July 1971), U.S. Army Medical Research and Development Command, Washington, D.C., Final Report, Contract No. DA-49-193-MD-2449, pages 128-134, 39 references

4. Periodical or journal, issue and volume pagination

   REFERENCE Journal of Applied Physiology, Vol. 29, No. 7, pages 129-135/1329-1335, 10 references

5. Page reference for translated article

   REFERENCE United States Atomic Energy Commission (Vie Milieu, Vol. 14, No. 1, pages 1-39, 1963), 36 pages, 72 references

6. Translation of journal where name, volume and serial numbers, and pagination changed

REFERENCE Hygiene and Sanitation, Vol. 12, No. 4, Environmental Protection Agency and National Science Foundation (Gigiena i Sanitariya, Vol. 22, No. 3, pages 14-26, 1970), Washington, D.C., pages 21-33, 5 references

7. Translation of journal, pagination changed

REFERENCE Acta Medica Iugoslavica, Vol. 22, No. 4, National Science Foundation (Acta Medica Iugoslavica, Vol. 22, No. 4, pages 21-33, 1970), Washington, D.C., pages 53-59, 5 references

8. Corporate author

REFERENCE Department of Epidemiology and Health, McGill University, Montreal, Quebec, 11 pages, 9 references

9. Corporate author, unpublished

REFERENCE Montrose Chemical Corporation (Unpublished; Selected Statements Presented at State of Washington DDT Hearings, Seattle, Washington, October, 1969), Torrance, Canada, 7 pages, 5 references

10. Series, with corporate author

REFERENCE Hazardous Working Condition Series, Industrial Hygiene Association; Industrial Hygiene Journal, Vol. 22, No. 4, pages 3-10, no references

11. Series, without corporate author

REFERENCE Dust Measurement Techniques, Asbestos Trade Association Journal, Vol. X, pages 1-12

12. Paper, from proceedings published by conference

REFERENCE Proceedings of the Third National Symposium on Radioecology, May 10-12, 1971, pages 1-30, 3 references

13. Paper, from proceedings published by a publishing company

REFERENCE Proceedings of the Third Annual Conference of Safety Engineers, Spartan Publishing Company (Paper presented at Dayton, Ohio, July 10, 1969), New York, pages 16-20, 10 references

14. Article from book, with editor

REFERENCE Industrial Hygiene Highlights, Volume I, L. V. Cralley, Editor; Industrial Hygiene Foundation of America, Inc., Pittsburgh, Pa., pages 140-178, 94 references

The REFERENCE field must always be filled in on the first page of the abstract.

C.11. PUBLICATION DATE Field

The PUBLICATION DATE field provides for recording the date of publishing or presentation of the document which is being abstracted.

Each abstract will have a PUBLICATION DATE field on the first page of the abstract. The date information will be numeric and will be entered into the field as an 8-digit number in the order, MMDDYYYY, representing the month, day, and year. Zero-fill is used for missing or omitted information. No punctuation is used in the field.

The abstracter is responsible for making sure that the publication date of the document is indicated on the abstract. If the publication date information is missing, incomplete, or cannot be determined, the abstracter must return the

document to the Document Control Manager for obtaining the needed information or for disposition of the document.

The publication date must refer to one document only, as a distinct entity, and must be one date, which is considered to be permanent and final.

When a document is published in more than one part, extending over a period of time, the publication date for the document is considered to be the date upon which the final part, and therefore the complete document, is published (see Example 4). When a document is cited as being published over a range of dates, such as 'May - June, 1970', the publication date is considered to be the last date of the range, in this case, 'June 1970' (06001970) (see Examples 2 and 3). When a document is cited as being published for an indefinite time period, such as 'Winter 1970' , the publication date is considered to be the last identifiable date of the period, in this case March 1970 (03001970). The determined or inferred publication date is entered into the PUBLICATION DATE field; and the ranges of dates or indefinite time periods are included parenthetically in the REFERENCE field (see C.10, page III-58), or presented in the text of the abstract, as applicable.

The publication date of many documents, such as technical reports, is the date upon which the document was published by the sponsoring agency. This information may be found on the cover page, front page, or elsewhere in the document. The date may be given as any period of time convenient to the publisher or dictated by the nature of the effort and subject reported. Examples of such dates include: 'July 1, 1972'; 'Friday, January 28, 1972'; 'June 30, 1971 to May 31, 1972'; 'June 1971', 'Fall 1969', and 'First Quarter, 1970'.

The publication date for a conference proceedings might be given as the range of days of the conference when the included papers were presented, such as 'July 10-14, 1972', or the date of publishing of the collective document in printed form, such as 'September 1962'. When a document is published at a different date from the presentation date, the date of publishing is entered into the PUBLICATION DATE field (see Example 1); the presentation date is entered into the REFERENCE field (see C.10, Examples 2 and 13).

Some representative equivalent dates are given in the following list; dates which are similar to the listed dates should be handled accordingly:

DATE	ENTRY
July 20 to July 25, 1968	07251968
September 28 to October 4, 1971	10041971
July 1, 1970 to June 30, 1971	06301971
May-June 1971	06001971
Winter 1969	03001969
First Half 1970	06001970
Last Quarter 1968	12001968
September 1970	09001970
1971-1972	00001972

Some documents, such as legislation, decrees, or standards specifications may have a number of dates, any of which might be confused with the publication date. The implications of each date should be considered before abstracting. For example, as seen for some existing documents in the system, a standard is decreed on May 1, 1969, to become effective on July 1, 1969, is published in

Russian language on June 1, 1969, and is published in the English language translation on August 1, 1970. For the example, the PUBLICATIO' DATE field entry is August 1, 1970. The publication date is always the date when the document is published in the language or form that the abstracter is working with. The earlier publishing date is entered into the REFERENCE Field (see C.10, page III-56); the other dates, being also of significance, are entered into the TEXT field (see C.13, page III-80) comprising the body of the abstract.

If the publication date for a document cannot be determined by the abstracter, or the content and form of the publication date cannot be decided, a knowledgeable person should be consulted for help.

Examples:

(1) Paper in proceedings of conference held February 8-12, 1971, proceedings published September 3, 1971:

PUBLICATION DATE 09031971

REFERENCE Paper presented at conference held February 8-12, 1971.

(2) Article from journal with citation, 'Vol. 2, No. 2, May-June 1969':

PUBLICATION 06001969

REFERENCE ...Vol. 2, No. 2, May-June 1969,...

(3) Paper presented at conference held November 6-9, 1971, paper not formally published (not printed):

PUBLICATION DATE 11091971

REFERENCE (Unpublished) paper presented at conference held November 6-9, 1971.

(4) Paper published in three parts, without identification as entities, continuing in a journal from 'Vol. 4, No. 3, June 1967' to 'Vol. 4, No. 4, July, 1967' to 'Vol. 4, No. 5, August 1967':

PUBLICATION DATE 08001967

REFERENCE Industrial Hygiene (Vol. 4, No. 3, June, pages 11-23; Vol. 4, No. 4, July, pages 1-8), Vol. 4, No. 5, pages 15-21, 50 references

to the extent that such information is given.

The PUBLICATION DATE field must always be filled on the first page of the abstract.

C.12. SUBMISSION DATE Field

The SUBMISSION DATE field provides for recording the date of submission for presentation or publication of the document which is being abstracted.

Each abstract will have a SUBMISSION DATE field on the first page of the abstract. The date information will be numeric and will be entered in the field in an order representing the month, day, and year (MMDDYYYY), using zero-fill for missing information and no punctuation.

The submission date refers to one document only, as a distinct entity, and must be one date, which is considered to be permanent and final.

For some documents, particularly articles or papers in a journal, the submission date is given as the date on which the document was received or accepted by the publisher (see Example 2). On some documents, such as technical reports, the submission date may be given either as a submission or receiving date on

the cover page, first page or elsewhere in the document. If a document does not have a submission date, the receiving date, or the acceptance date, in that order, may be used as the submission date (see Example 1). For some documents, no submission, receiving, or acceptance date is given; in which case, no entry is made in the SUMBISSION DATE field.

Example:

(1) Journal article with legend, "Received June 1972", should be entered
SUBMISSION DATE 06001972

(2) Journal article, with legends, "Submission date June 6, 1968" and "Acceptance date November 10, 1968"
SUBMISSION DATE 06061968

NOTE 1: It is helpful to remember that the submission date is an earlier date than the publication date.

NOTE 2: A number of documents particularly as handled by an information center, clearinghouse, or other dissemination agency, will have a stamped legend, "DATE RECEIVED", bearing the date upon which the agency received the document from the publisher. This date is not the date of submission and should not be entered into the SUBMISSION DATE field.

The SUBMISSION DATE field should be filled in on the first page of the abstract if submission date information is available.

C.13. TEXT Field

The TEXT field is comprised of the KEYWORDS and BODY subfields, which will be discussed individually below, and provides for information (body) that is extracted from a document and information (keywords and body) that characterizes the document that is being abstracted, including the name, where applicable, of the foreign language in which the document was published as the last word of the body.

Each abstract will have a TEXT field on the first page of the abstract, and on continuation sheets as necessary. The information is entered into the field in alphanumeric form, in the formats given below, using the conventions for punctuation and other mechanics, which are specified, as applicable. Either or both the (KEYWORDS) and (BODY) subfields may be extended to continuation pages, using as many forms as necessary, providing that the proper identification and linkage of the continuation pages with the first page of the abstract are made in the NIOSH NUMBER, DATE, and ABSTRACTER fields, and making sure that a count of the total number of pages making up the abstract is carried on the first page, with each page being accounted for in the PAGE_____OF_____ field of that page.

The TEXT field must contain information in both the (KEYWORDS) and (BODY) subfields.

The computer search program for the NIOSHTIC system will normally search only the TEXT (i.e., KEYWORDS and BODY) field of the abstract on a full-text basis in response to a query. The bibliography fields (including the TITLE field) are not

normally searched on a full text basis, but these fields comprising the bibliography can be reached through a special procedure. It is important, however that significant words from the TITLE field appear in either the KEYWORDS or BODY subfields because of the restricted accessibility to the bibliography field. In every instance applicable, the CAS number and chemical name must appear in either the KEYWORD or the BODY subfield.

The TEXT field always applies to one whole document, that is, an entity which can be identified. An identifiable document which contains other documents can be abstracted as one complete document, with the TEXT field referring to the complete, collective document. Individual documents in a collective document, such as technical papers in a journal, or even sections of a book, can be abstracted as long as such documents or sections can be identified as distinct entities. The TEXT field cannot refer to more than one document, unless the group of documents can be considered to be one document, because of problems of identification.

The TEXT field thus applies to any logical unit of information that can be identified. The length, subject, or complexity of the document will not affect the capability of the TEXT field to accommodate the information. The TEXT field can, therefore, be used to abstract a book, report, technical paper, newspaper article, entire newspaper, dictionary, data sheet, or any other identifiable logical unit that is considered to contain information for the system.

Regardless of the length of the document, the TEXT field has practical limits for the number of words used in the abstract. Including 5 to 20 keywords, the TEXT field should normally contain between 100 to 225 words. Some documents

may require fewer or more words; however, such documents are considered to be exceptions. The wording of the TEXT field must be in English, although the document, itself, may be carried untranslated in the system library files.

C.13.1. KEYWORDS Subfield

The KEYWORDS subfield provides for attributive concepts which will describe and identify the document contents in a search on the basis of subject content.

Keywords are entered into the subfield, one keyword at a time, separated by commas. A keyword may consist of more than one word, in which case, each word of the keyword is joined to the next word by a hyphen (see Note 1, page III-84). A methodology for developing keywords for chemical names is given in Appendix A.2, page A-2, with a listing of common keywords for chemical names in Appendix A.3, page A-21. Each keyword is initially capitalized with the exception of keywords containing proper names (each name in a proper name is initially capitalized) and keywords which are acronyms (see Note 2, page III-85). The keywords may be alphabetic, alphanumeric, or all numeric. The following kinds of words CANNOT be used in the KEYWORDS subfield: abbreviations; words in the BODY subfield; and words in foreign language or with British spellings. The keywords form the index of the abstract indicating the information contents of a document in logical terms which can be used in a query to locate the document. Selection of keywords is the function and responsibility of the abstracter. The indexing is done by analysis of the document and supplying implied information to the abstract. Keywords must be indexable concepts only. Keywords must clearly point to the desired information and must be searchable; that is, keywords must be the terms which are most likely to be looked for in a search. As a rule, keywords are

generic, tending to categorize or group ideas. However, each keyword used must have specific meaning or implications for the information described for a document.

The abstracter will have a keyword list, made up of terms which have been used in indexing the abstracts and furnished by the abstracting supervisor; the chemical keyword list furnished in Appendix A.3; and the NIOSHTIC Thesaurus for use as guides in supplying keywords to the abstracts consistently. The abstracter is not restricted to using the lists or thesaurus; however, the abstracter should note for review by the abstracting supervisor the use of any keywords which are not in the lists or thesaurus so that these words may be incorporated in them.

In using keywords, the abstracter must often choose against terms which are too broad or general for refining a search, or too narrow or specific for defining a search, for a given document, and must find terms which provide the desired level of specificity.

To be useful in a search, keywords must be indicative, stand-alone terms. Only content words, that is, nouns and verbs, may be used as keywords, the noun having precedence over the verb for conceptualization. The present participle form is preferred for verbs. Quantifiable nouns, that is, names of things which can be counted, are pluralized. Qualifiable nouns, that is, names of concepts such as actions or conditions which can be intensified, but not counted, are not pluralized. For example, 'house' and 'housed' cannot be keywords; the noun, 'houses', can be used as a keyword, the noun 'housing' being a better (more conceptual) keyword. The noun 'housing' (referring to an enclosure on a device) can be distinguished from the noun 'housing' (referring to the con-

cept of abodes) by the letter 's', as 'housings', to refer to enclosures, which are things that can be counted in the same way as 'houses'. (The verb, 'housing', referring to the act of enclosing or sheltering, would not be used.)

A change in the spelling of a word by adding or removing letters creates different words for the computer. A term used in the TITLE field or BODY subfield is a different term from that term with different spelling in the KEYWORDS subfield (see Note 2).

All chemicals and compounds which appear in the title or which are of significance in the document must be indexed in the KEYWORDS subfield with a keyword derived by the methodology for developing generic keywords from chemical names given in Section A.2 of Appendix A. The CAS number is obtained from the Desktop Analysis Tool (DAT) furnished to the abstracter and must appear in the keywords sections if it is not used in the BODY section.

Keywords should relate to topics of the document. Ideas which are mentioned in passing or which do not have significance in the document should not generate keywords. A practical limit for keywords is set as 5 to 20 terms. Fewer or more keywords may be used, but such uses are considered to be exceptional.

NOTE 1: The computer search program looks at one word at a time. Multiple word search terms are found by logical combination of terms, which might not be successful if the multiple word term did not always occur in the abstract in the logical pattern specified in the query. For this reason, a convention is adopted for joining certain multiple

terms by hyphens to form keywords. The convention has limited application as the logical combining capacity of certain desired terms may be constrained.

NOTE 2: All letters in an acronym are capitalized. Terms such as PETN, DDT, and RDX may be only known generally as acronyms. Other terms such as LD50, TLV, and MLC have defined meaning in the system.

NOTE 3: In using hyphenation and acronyms and for other problems in indexing, the abstracter should be guided by the keyword list and the abstracting supervisor.

C.13.2. BODY Subfield

The BODY subfield provides for the information which will reflect or state the information contents of the document.

Information is entered into the BODY subfield in normal English language, using conventional sentence structure, punctuation, spelling and spacing between words. Special characters, except as shown in B.7., Acceptable Characters, and special symbols, including Greek letters, exponents, superscripts, subscripts, italics, and underlines, are not permitted in the field. Such characters and symbols must be interpreted or handled by conventions, as explained in B.6., Style and Mechanics. Acronyms, except those well established and recognized, and abbreviations are not permitted in the field. Information in the field can be alphabetic or numeric.

The BODY subfield carries the significant informational concepts of the document. Selection of the concepts is the function and responsibility of the abstracter. The abstracting is done by analysis of the document and supplying the explicit information to the abstract. The subfield may carry any information which the abstracter considers useful; the subfield must convey, concisely and clearly, all of the information, complementary to the bibliographic and keywords fields, necessary for identifying and describing a document. Information carried in other fields should not be carried in the BODY subfield, except that the chemical name and other significant words in the TITLE field must appear in the BODY subfield if they do not appear in the the KEYWORDS subfield. The BODY subfield has a practical word limit of 95 to 220 words.

If the abstracter has doubt as to the usefulness of certain information, it is better to include the information. Such information is better accessed and not used than inaccessible.

A sample abstract showing the prepared bibliographic and text sections is shown as Figure 3.

C.14. EDITOR Field

The EDITOR field provides for identification of the person who edits the abstract.

Each abstract will have an EDITOR field on the first page of the abstract. The name of the person who checks or validates the abstract for correctness, and for adequacy of form and content, is entered into the field in the order, last

SYSTEMS RESEARCH COMPANY

FILE NUMBER: NIOSH-1 NIOSHTIC ABSTRACTING/INDEXING FORM

ABSTRACTER Riley, W DATE 09031972 PAGE 1 OF 1

NIOSH NUMBER NIOSH 00000049 ACCESSION NUMBER NTIS AD 846601 NIOSH SOURCE ✓

TITLE Hazards of Insecticides Formulated into Plastic Pellets 0,0,0',0'-Tetramethyl 0,0',-Thiodi-P-Phenylene Phosphorothioate (Technical ENT-27165)

AUTHOR(S) Weeks, M. H., R. E. Boldt, and M. Steinberg

REFERENCE United States Army Environmental Hygiene Agency, Edgewood Arsenal, Md., 10 pages, 1 reference

PUBLICATION DATE 05131968 SUBMISSION DATE ✓

TEXT (KEYWORDS) Blood-chemical-studies, Pathological-studies, Toxicity, Ingestion, 3383968, PM9001085, Thioates

(BODY) The effect of single oral doses of 0,0,0',0'-Tetramethyl 0,0'-thiodi-p-phenylene phosphorothioate (Technical ENT-27165) larvicide on plasma and red blood cell (RBC) cholinesterase activity is studied in adult mongrel dogs to determine the hazards of accidental ingestion. ENT-27165 is administered in polyvinyl chloride pellets, as a liquid in gelatin capsules or via stomach tube. The accidental ingestion of small numbers (fewer than 200 for a 30 pound mammal) of the plastic pellets each weighing 60 milligrams and impregnated with 20% (by weight) of the insecticide is not considered to be hazardous.

EDITOR Hunt, M S.B.N. 09061972

DATE: EDITING 09041972 MICROFICHE 09061972 HARDCOPY 09071972 NT/ST 09061972 DATA ENTRY 09081972

Form: SRC-3-72

Figure 3. Sample Abstract

name, comma, space, first initial. No other information, except as indicated below, or punctuation is necessary or desired.

Each abstract must be edited before submission for further processing. Abstracts released without the editor's name will be returned to the editorial group for editing.

After an abstract is prepared on the MT/ST equipment, the copy and the original will be returned to an editor for proofreading. The editor will enter his initials in the open space beside the EDITOR field; an abstract with no initials in this area will be returned to the editor for proofing.

Example:

EDITOR Johnson, B.

The EDITOR field must always be filled on the abstract.

NOTE: C.15 through C.19. DATE:

The label 'DATE' applies to the EDITING, MICROFICHE, HARD COPY, MT/ST, and DATE ENTRY fields which follow.

C.15. EDITING Field

The EDITING field provides for recording the date upon which editing of the abstract is completed.

Each abstract will have an EDITING field on the first page of the abstract. The date is entered into the field as an 8-digit number, in the order, MMDDYYYY, representing month, day, and year. No other information or punctuation is needed or desired in the field.

When a copy of an abstract is proofread after MT/ST preparation, the date of proofreading, if called for by the supervisor of the editing, may be entered on the abstract beside the initials of the editor/proofreader.

Example:

'October 5, 1972'

EDITING 10051972

The EDITING field must always be filled on the abstract.

C.16. MICROFICHE Field

The MICROFICHE field provides for recording the date when the document is recorded on microfiche.

Each abstract will have a MICROFICHE field on the first page of the abstract.

The microfiche date is entered on the abstract by the Document Control Manager and is not a concern of the abstracter.

C.17. HARD COPY Field

The HARD COPY field provides for recording of the date upon which the document is reproduced in printed form from the microfiche.

Each abstract will have a HARD COPY field on the first page of the abstract.

The hard copy date is entered into the field by the Document Control Manager, and is not a concern of the abstracter.

C.18. MT/ST Field

The MT/ST field provides for recording of the date upon which the preparation of the abstract in the MT/ST (Magnetic Tape/Selectric Typewriter) operation is completed.

Each abstract will have a MT/ST field on the first page of the abstract.

The MT/ST date will be entered into the field by the MT/ST supervisor, and is not a concern of the abstracter.

C.19. DATA ENTRY Field

The DATA ENTRY field provides for recording of the date upon which the abstract is established in the computer data file.

Each abstract will have a DATA ENTRY field on the first page of the abstract.

The data entry date is entered into the abstract by the system supervisor, and is not a concern of the abstracter.

Appendix A. CHEMICAL NAMES

The purpose of the system described in this section is to provide for effective retrieval of all information on a specific chemical and at the same time to allow retrieval of information for the relevant particular group to which the chemical belongs. The importance of this section cannot be overstressed since, in some instances, the CAS number used to search for the specific chemical may not have been located or may have been assigned incorrectly or may have been entered incorrectly by the source of the CAS number, the abstracter, or typist. Also in some instances, there may be requests for information on particular groups of compounds or at other times for information on a specific compound which may not be in the system and for which information in a group into which this chemical falls may be substituted.

The objective of this section is to teach the abstracter how to recognize the chemical grouping into which each chemical falls by breaking down the name into parts. This task is not as difficult as it may sound, since most of the time the grouping may be derived from the chemical name or may have been mentioned within the paper being abstracted. Thus, from the name for a specific chemical suchas O,O-Diethyl-O-(p-nitrophenyl)-thiophosphate may be derived the particular group name "thiophosphate." The particular group name is to be the keyword that will reach the specific chemical and the particular group.

A.1. Format of Organic Chemical Names

When searching by computer, it is essential that all terms in organic names be connected (no spaces) in some manner. Numbers and other symbols (see Table 1)

are usually connected together with commas. Numbers are connected to either words, parentheses, or brackets with hyphens (no space). Words should be "pushed together".

Example - WRONG: 2,3,4-tris(p- nitrophenyl) benzene

RIGHT: 2,3,4-tris(p-nitrophenyl)benzene

There are some common exceptions to the rule "push together". There are chemicals which are normally written separately as two words and should remain separate. These chemical terms are illustrated below; this list is generally, but not conclusively, complete:

acid	dihydrochloride	lactone
alcohol	ether	oxide
aldehyde	hydrobromide	oxime
anhydride	hydrochloride	peroxide
bromide	hydrosulphate	sulfate
chloride	isocyanate	sulphonate
dihydrobromide	ketone	

Also, terms in some chemical classes are written as two words; for example:

Esters (compounds ending in "ate")

Example - acetate, formate, benzoate, caprolate

Amine Salts

Example - Triethylamine Hydrochloride

Acid Salts

Example - Sodium benzoate

A.2. Keywords for Chemical Names

Chemicals may be divided into three large classes: Organic, Inorganic, and Organometallic. Organic compounds are derived from carbon. Inorganic compounds

consist of compounds of all other elements. Organometallic compounds are those derived from metals and carbons compounds.

A.2.1. Inorganic Chemicals

Simple inorganic compounds may be entered without extra keywords since the manner in which the names are usually written enables one to retrieve the entry as separate words from within the abstract. Thus, "Calcium Cyanide" produces the two keywords "Calcium" and "Cyanide" if it appears in the text and there is no reason to enter these terms twice.

A.2.2. Organic Chemicals

The basic approach to deriving a keyword from a specific organic chemical name will be for the abstracter to separate the substituents (all terms except the base name) and the base name (word to be used as the keyword). This simple procedure in most cases will permit coding the most complex term.

PROCEDURE:

1. The name used in this process must be a chemical name. It cannot be a trade name, common name, generic name, or brand name. The chemical name will, most of the time, be found in the article abstracted or in the DAT or Chemical Abstracts when a CAS number is looked up.

2. Once a chemical name has been found, the abstracter is ready to proceed. Within each name, there may be a series of numbers, dashes, commas, and single letters which, to a chemist, signify position locations and isomerization (see Table 1). In deriving a keyword from the name, these numbers and letters should not be considered. Therefore, as STEP 1, we should delete all of those terms which appear in Table 1.

TABLE 1 - Notation Indicating Location or Isomerization

Numeral	Indicates location of substituents
O	Indicates attached to an oxygen
N	Indicates attached to a nitrogen
S	Indicates attached to a sulfur
o (ortho-) p (para-) m (meta-)	Indicates location of a substituent
α (alpha), β (beta), γ (gamma) δ (delta), ε (epsilon), etc.	Inidcates stereochemistry
syn-, anti-, trans-, cis-	Indicates stereochemistry
D, L	Indicates configuration
d, l, dl, (+), (-), (±)	Indicates optical isomers
n (normal) s (sec or secondary) t (tert or tertiary)	Indicates geometric isomers
meso, threo, erythreo	Indicates configurations

Example: N-(3,4-Dichloropr .nyl)-N'-Methoxy-N'-Methylurea

STEP 1 leaves: (Dichlorophenyl)MethoxyMethylurea

STEP 2 Those terms appearing in parentheses or brackets are substituents (almost always). Therefore, these terms may be deleted.

STEP 2 leaves: methoxymethylurea

STEP 3 Certain terms preceding substituents or substituents within parentheses are multipliers and may be disregarded in deriving the base name (see Table 2). This will also help in identifying substituents since in most cases those names preceded by these notations are substituents.

Thus: Dichloro means 2 X chloro

STEP 3 leaves: methoxymethylurea

STEP 4 Now that we have eliminated all of the easy terms, we must now eliminate the substituents from the base word. To aid us in the endeavor, we may use the list of the substituents in Table 3 to distinguish substituents from base words. This list was derived from Vol. 76 of Chemical Abstracts Index Guide in the Introduction, Section IV., H, which may be used for additional information. The abstracter only needs to scan the list to find the substituent in question. If it is spelled in the name exactly as it appears in the listing, then it may be identified as a substituent and may be eliminated. Thus, in our example we find two substituents listed.

TABLE 2 - Multiplication Notation Indicating the Number of Substituents

Attached to Substituent		Preceding Parentheses	
Prefix	Meaning	Prefix	Meaning
mono	one	bis	two
di	two	tris	three
tri	three	tetrakis	four
tetra	four	pentakis	five
penta	five	hexakis	six
hexa	six	heptakis	seven
hepta	seven	octakis	eight
octa	eight		
nona	nine		
deca	ten		
undeca	eleven		
dodeca	twelve		
pentadeca	fifteen		
eicosa	twenty		
triconta	thirty		

Example: methoxymethylurea

methoxy is listed;

remaining is methylurea.

methyl is listed;

remaining is urea.

STEP 4 leaves: Urea (as the base word)

STEP 5 Before we enter this as a keyword, we must make this name plural, so that it may be distinguished from the compound "urea." Thus, we now have the term "ureas."

STEP 5 leaves: Ureas

STEP 6 Only one last step remains and that step is to go back to the original name and find out if the compound contains any chloro, bromo, iodo, or fluoro substituents. If it does, then the term entered should be preceded by chlorinated (for chloro), brominated (for bromo), iodinated (for iodo), fluorinated (for fluoro), or halogenated (used when a compound contains two or more different groups, i.e., chloro and bromo). This term is to precede our derived base word and is joined to it with a hyphen. The last step is designed to give some degree of specificity to our keyword, since there are many compounds which may be halogenated.

In our example, the specific chemical name contained "chloro." Thus, our keyword for the compound used as an example is "chlorinated-ureas."

STEP 6 leaves: chlorinated-ureas

SPECIAL CONSIDERATIONS:

A. In Table 4 are found those commonly occurring prefixes which should not be deleted from the base name. These are not substituents, but instead indicate the type of compound.

B. There will be some compounds whose chemical name includes two or more separate words. Each of these compounds requires some type of special handling in order that the important base word or words are identified. Most of these compounds fall into three categories and examples will be demonstrated below. There are likely to be a few other types which are not specifically governed by the rules below and in that case, the abstracter must decide which word or words should be used in the keyword. The entire process of extracting basewords is simple, and most abstracters will be able to accomplish this task.

GROUP 1: ACIDS, ACID SALTS, ACID HALIDES (Chlorides, Bromides, Fluorides, Iodides)

Example: ACIDS cis-3-chloropropenoic acid

Step 1: chloropropenoic acid

Step 4: propenoic acid

Step 5: propenoic-acids

Step 6: chlorinated-propenoic-acids

Example: ACID SALTS (Phenylacetic Acid, Sodium Salt)

Step 4: Acetic acid, sodium salt

Step 5 note: Ignore metallic element for the moment and derive the keyword just as an acid. Therefore, base word and keyword is acetic-acids. For salts there will always be two keywords one for the parent acid as derived above (acetic-acids) and another for the metallic element. To derive the latter, the abstracter merely need write the word organo- and add the element present. Thus, organo-sodium in the last keyword.

Example - ACID HALIDES (Chlorides, Bromides, Iodides, Fluorides)

2,4,6,-Trinitrobenzoyl chloride

As explained above, the base words should be derived and linked by a hyphen.

Keyword: Benzoyl-chlorides

GROUP 2: AMINE SALTS, NITROGEN-BASE SALTS

Amine and nitrogen-base salts occur as two or more separate terms. The second term is usually one of the terms listed in Table 5. These terms need not be included in the keyword.

Example - Triethylamine hydrochloride

Step 1-4 leaves: Amine Hydrochloride; ignore second term.

Keyword: Amines

Example - 1-Methyl-2-(3-pyridyl)pyrrolidine sulfate (nitrogen-base salts)

Step 1-4 leaves: Pyrrolidine sulfate; ignore second term.

Keyword: Pyrrolidines

C. Some compounds will be so simple that deriving a keyword will be a useless process. These few compounds should be omitted from the above processes.

Example - Methyl Chloride; Formaldehyde; Acrolein; Acetone

TABLE 3. List of Substituent Prefixes

abietamido
acenaphthenyl
1,2-acenaphthenylene
1-acenaphthenylidene
acetamido
acetenyl
acetimido
acetimidoyl
acetoacetamido
acetoacetyl
acetohydroximoyl
acetonyl
acetonylidene
acetoxy
acetyl
acridanyl
acryloyl
acrylyl
adamantyl
adamantylene
adipaldehydoyl
adipamoyl
adipaniloyl
adipoyl
adipyl
alaninamido
alanyl
β-analyl
aldo
alloisoleucyl
allophanamido
allophanoyl
allothreonyl
allyl
β-allyl
α-allyl
allylidene
ambrosan-6-yl
amidino
amidoxalyl
amino
(aminoamidino)
(aminoiminophosphoranyl)
amoxy
amyl
tert-amyl
amylidene
anilino
anisal
anisidino
anisoyl
anisyl
anisylidene
anthranilamido
anthraniloyl
anthranoyl
anthraquinoyl
anthraquinonylene
anthroyl
anthryl
anthrylene
antipyrinyl
antipyroyl
apocamphanyl
apotrichothecanyl
arginyl
asaryl
asparaginyl
asparagyl
aspartoyl
aspartyl
α-aspartyl
β-aspartyl
atisanyl
atropoyl
azelaoyl
azelaaldehydoyl
azi
azido
azino

benzal
benzamido
benzenesulfenamido
benzenesulfonamido
benzenyl
benzhydryl
benzhydrylidene
benzidino
benziloyl
(3-benziloylpropyl)
benzimidazolinyl
2-benzimidazolyl
benzimido
benzimidoyl
benzofuryl
benzohydroximoyl
o-benzoquinon-3-yl
p-benzoquinon-2,5-ylene
benzoxy
benzoyl
(benzoylacetyl)
(benzoylformyl)
benzyl
benzylidene
benzylidyne
(benzyloxy)
bicarbamoyl
bicyclo(1.10)butylene
biphenylyl
biphenylene
biphenylylene
2-bornyl
3-bornylidene
borono
boryl
borylene
borylidyne
bromo
1,3-butadienediylidene
butadiynylene
2-butenylene
butoxy
sec-butoxy
tert-butoxy
butyl
butyl β
butyl γ
sec-butyl
tert-butyl
1,4-butylene
sec-butylidene
(butyloxy)
butynedioyl
butyryl

cacodyl
cadinan-1-yl
2-camphanyl
camphoroyl

b-camphoryl
canavanyl
caprinoyl
caproyl
capryl
capryloyl
caprylyl
carbamido
carbamoyl
carbamyl
carbanilino
carbaniloyl
carbazimidoyl
carbazol-9-yl
carbazoyl
carbethoxy
carbobenzoxy
carbonimidoyl
carbonothioyl
carbonyl
(carbonyldioxy)
1-carbonylethyl
(carbonylmethyl)
(carbonylmethylene)
carboxy
(carboxyformyl)
(5-carboxyvaleryl)
carbyl
carnoxyl
caronaldehydoyl
carvacryl
carvomenthyl
10-caryl
cathyl
cedranyl
cetyl
chaulmoogroyl
chaulmoogryl
chloro
(chloroformyl)
(chloroglyoxyloyl)
(chlorooxalyl)
chlorosyl
chloryl
cholesteryl
choloyl
chromanyl
cinchoninoyl
cinnamal
cinnamenyl
cinnamoyl
cinnamyl
cinnamylidene
citraconimido
citraconoyl
conaninyl
cresotoyl
cresoxy
cresyl
cresylene
crotonoyl
crotonyl
crotyl
cumal
cumenyl
cumidino
cuminal
cuminyl
cuminylidene
cumoyl
cumyl
d-cumyl
cyanamido
cyanato
cyano
cyclodisiloxan-2-yl
cyclohexadienylene
cyclohexanecarboxamido
1,2-cyclohexane-
dicarboximido
cyclohexyl
cymyl
cysteinyl
cysteyl
cystyl

decanedioyl
decanoyl
decasiloxanylene
decyl
desyl
1,2-diazenediyl
diazeno
diazo
diazoamino
diazonio
dibenzothiophene-yl
diborane(4)tetrayl
1,2-d[illegible]de-
carbora[illegible]-yl
digycolo
dimethyl[illegible]
dioxy
1,2-diphosph[illegible]diyl
diposphine[illegible]
diphosphino
disilanoxy
disilanyl
disilanylene
disilazano[illegible]
2-disilazany[illegible]
disiloxanediylidene
disiloxanoxy
disiloxanylene
disilthianoxy
disulfinyl
(dithiobicarbamoyl)
(dithiohydroperoxy)
dodecanoyl
dodecyl
duryl
durylene

enanthoyl
enanthyl
epidoxy
epidithio
epioxy
epithio
epoxy
(epoxyethyl)
2,3-epoxylpropyl
eremophilan-1-yl
ethanediylidene
ethene
ethinyl
ethoxalyl
ethoxy
(ethoxycarbonyl)
(1-ethoxyformimidoyl)
(ethoxyphosphinyl)
ethyl
ethylene
[ethylenebis
(nitrilodimethylene)]
(ethylenedioxy)
(ethyloxy)

(ethylthio)
eudesman-8-yl

farnesyl
fenchyl
fluoranyl
fluoren-9-ylidene
fluoro
formamido
1,5-formazandiyl
1-formazano
5-formazano
1,3,5-formazantriyl
formazanyl
formazyl
formimidoyl
(1-formimidoylformimidoyl)
(formimidoylformyl)
(formimidomethyl)
formyl
fucosyl
fumaraniloyl
fumaroyl
furfuryl
furfurylidene
furoyl
furyl

galloyl
gentisoyl
geranyl
germacran-6-yl
gibbanyl
(glucosyloxy)
glutaminyl
glutamoyl
glutamyl
α-glutamyl
γ-glutamyl
glutaryl
glyceroyl
glyceryl
glycidyl
glycinamido
glycinimidoyl
glycoloyl
glycolyl
glycyl
glyoxalinyl
glyoxalyl
glyoxylimidoyl
glyoxyloyl
(glyoxyloylmethyl)
glyoxylyl
guaiacyl
guaian-8-yl
guanidino
(guanidinoazo)
guanyl

heptadecanoyl
heptanamido
heptanedioyl
heptanoyl
hexadecanoyl
2,4-hexadiynylene
hexamethylene
hexanedioyl
hexanethioyl
hexyl
hippuroyl
hippuryl
histidyl
homocysteinyl
homomyrtenyl
homopiperonyl
homoseryl
homoveratroyl
homoveratryl
hydantoyl
hydnocarpoyl
hydnocarpyl
hydracryloyl
hydratropoyl
hydrazi
hydrazinediylidene
hydrazino
1-hydrazinyl-2-ylidene
hydrazo
hydrazono
hydro
hydrocinnamoyl
hydrocinnamyl
hydroperoxy
(hydroperoxyformyl)
hydroxamino
hydroximino
hydroxy
hydroxyl
(hydroxyphosphinyl)
hygroyl

imidazolidyl
imidazolinyl
imidocarbonyl
(imidocarbonylamino)
imino
(3-iminoacetonyl)
(iminodisulfonyl)
(iminonitrilo)
(iminophosphoranyl)
indanyl
indenyl
1-indolinyl
2-indolinylidene
indyl
iodo
iodoso
iodoxy
isoallyl
isoamoxy
isoamyl
sec-isoamyl
isoamylidene
isobornyl
isobutenyl
isobutoxy
isobutyl
isobutylidene
isobutyryl
isocrotyl
isocyanato
isocyano
isohexyl
isohexylidene
2-isoindolinyl
isoleucyl
isonicotinoyl
isonipecotoyl
isonitro

isonitroso
1-isopentenyl
isopentyl
isopentylidene
isophthalal
isophthalaldehydoyl
isophthaloyl
isophthalylidene
isopropenyl
isopropoxy
isopropyl
isopropylidene
(isopropylidenedioxy)
isosemicarbazido
isothiocyanato
isothiocyano
isovaleryl
isovalyl
isoviolanthrenylene

kauranyl
kauranylene
kaurenyl
keto

labdan-15-yl
lactosyl
lactoyl
lanostenylene
lauroyl
leucyl
levulinoyl
linalyl
linolelaidoyl
linolenoyl
γ-linolenoyl
linoleoyl
lupanyl
lysyl

malecoyl
malonaldehydoyl
malonamoyl
malonaniloyl
malonimido
malonyl
maloyl
maltosyl
mandeloyl
p-menth-2-yl
p-menth-3,5-ylene
mercapto
mesaconoyl
mesidino
mesityl
α-mesityl
mesoxalyl
mesyl
metanilamido
metanilyl
methacryloyl
methallyl
methanetetrayl
methene
methenyl
methionyl
methoxalyl
methoxy
(methoxycarbonyl)
methyl
[(methyldithio)sulfonyl]
methylene
(methylenedioxy)
[(methylenedioxy)phenyl]
(methylenedisulfonyl)
methylidyne
methylol
(methyloxy)
1-methyl-2-pyranium-2-yl
1-methylpyridinium-2-yl
(methylthio)
(methyltrioxy)
morpholino
myristoyl

naphthal
naphthalimido
naphthenyl
naphthionyl
naphthobenzyl
naphthothiophene-yl
naphthoxy
naphthoyl
naphthyl
naphthylene
naphthylidene
(naphthylnaphthyl)
nazyl
neopentyl
neophyl
neryl
nicotinimidoyl
nicotinoyl
nipecotoyl
nitramino
aci-nitramino
nitrilo
nitrilophosphoranyl
nitro
aci-nitro
nitrosamino
nitrosimino
nitroso
nitrothio
nonanedioyl
nonanoyl
norbornyl
norbornylene
norcamphanyl
norcaryl
norpinyl
norleucyl
norvalyl

octadecanoyl
octanedioyl
octanoyl
tert-octyl
oenanthyl
oleanamyl
oleoyl
ornithyl
oxalaldehydoyl
oxalyl
oxamido
oxamoyl
oxamyl
oxaniloyl
oxazolinyl
oximido
oxo
oxobornyl
oxoboryl
1-oxoethyl
oxoethylene
oxophenylhydrazino
oxophenylmethyl
2-oxovinyl

2-oxotrimethylene
oxy
oxybis(methylene-carbonylimino)

palmitoyl
pantothenoyl
pelargonoyl
pelargonyl
pentadecanoyl
pentamethylene
3-pentanesulfonamido
1,2-pentazadieno
2-pentenediylidyne
tert-pentyl
pentyl
pentylidyne
perchloryl
perthio
phenacyl
phenacylidene
phenanthrothiophene-yl
phenanthryl
phenanthrylene
phenenyl
phenethyl
phenethylidene
phenetidino
phenetyl
phenoxy
phenyl
phenylalanyl
phenylazoimino
phenylbenzoyl
phenyldiazenyl
phenylene
phenylenebis(azo)
phenylenebis(azo)methylimino
phenylenebis(1-oxo-1--ethanyl-2-ylidene
phenylenedimethylene
phenylenedioxy
phenylglyoxyloyl
phenylidene
phenylimidocarbonyl
phenyloxalyl
phenyloxy
phenylphenoxy
phenylsulfenyl
phenylsulfinyl
S-phenylsulfonimidoyl
phorbinyl
phosphinico
phosphinidene
phosphinidyne
phosphinimyl
phosphino
phosphinothioyl
phosphinothioylidene
phosphinyl
phosphinylidene
phosphinylidyne
phospho
phosphonoformyl
phosphononitridyl
phosphoranyl
phosphoranylidene
phosphoranylidyne
phosphoro
phosphoroso
phthaladyl
phthalal
phthalaldehydoyl
phthalamoyl
phthalanylidene
phthalidylidyne
phthalimido
phthalocyaninyl
phthaloyl
phthalylidene
phyllocladanyl
phytyl
picolinoyl
picryl
pimeloyl
4-pinanyl
pinanylene
pipecoloyl
piperidino
piperidyl
piperidylidene
piperonyl
piperonylidene
piperonyloyl
pivaloyl
pivalyl
podocarpan-13-yl
porphinyl
pregna-5,16-dien-21-yl
prenyl
prolyl
2-propanesulfonamido
propargyl
propenyl
propenylene
propenylidene
propioloyl
propiolyl
propionamido
propinoyl
propionyldioxy
propionyloxy
propoxy
propyl
sec-propyl
propylene
propylidene
propylidyne
propyloxy
protocatechuoyl
pseudoallyl
pseudocumidino
as-pseudocumyl
δ-pseudocumyl
γ-pseudocumyl
pseudoindolyl
pteroyl
2H-pyranio
2H-pyran-2-ylium-2-yl
pyrazolidyl
pyrazolinyl
pyridinio
pyridyl
pyroglutamoyl
pyromucyl
pyrrolidyl
pyrrolinyl
pyrrol-1-yl
pyrroyl
pyrryl
pyruvoyl
ψ-quaterphenylyl

quinaldoyl
quinolyl
quinonyl
quinuclidinyl
α-resorcyloyl
β-resorcyloyl
γ-resorcyloyl
rhamnosyl
ricinelaidoyl
ricinoleoyl
rosan-6-yl

salicyl
salicylidene
salicyloyl
sarcosyl
sebacoyl
semicarbazido
semicarbozono
senecioyl
seryl
siamyl
silanetetrayl
siloxy

silyl
silylene
silylidyne
sorboyl
spirostanyl
stearoyl
styrene
styrolene
styryl
suberoyl
succinaldehydoyl
succinamoyl
succinamyl
succinaniloyl
succinimido
succinyl
sulfamino
sulfamoyl
sulfamyl
sulfanilamido
sulfanilyl
sulfeno
sulfhydryl
sulfino
sulfinyl
sulfo
sulfonyl
sulfuryl

tartaroyl
tartronoyl
tauryl
terephthalal
terephthalaldehydoyl
terephthalamoyl
terephthalaniloyl
terephthaloyl
terephthalylidene
m-terphenylyl
terphenylylene
tetradechanoyl
tetramethylene
1,4-tetraphosphinediyl
tetrasiloxyanylene
tetrathio
tetrazanediylidene
tetrazanylene
1-tetrazeno
thenoyl
thenyl
thenylidene
(thenyloxy)
thexyl
thianaphthenyl
thiazolidyl
thiazolinyl
[(5-thiazolyl-carbonyl)methyl]
thienyl
(thienylthienyl)
(thioacetonylidene)
(thiobenzoyl)
thiocarbamoyl
thiocarbamyl
(thiocarbonyl)
thiocarboxyl
thiocyanato
thiocyano
(thioformyl)
(thiohexanoyl)
thiohydroperoxy
thiohydroxy
thiomorpholino
(thionitroso)
thionyl
thiophenacyl
thiosulfeno
(thiosulfo)
thioxo
thiuram
threonyl
4-thujyl
thymyl
thyronyl
toloxy
p-toluenesulfonamido
toluidino
toluoyl
toluyl
tolyl
α-tolyl
tolylene
α-tolylene
tosyl
triazano
1-triazeno
S-triazin-2-yl
trichothecanyl
tridecanoyl
(trimethylammonio)
trimethylene
1,3,3-trimethyl-2-norbornyl
(trimethylphosphonio)
trisilanylene
trisiloxane-1,3,5-triyl
trithio
trityl
tropanyl
tropoyl
tryptophyl
tyrosyl

undecyl
undecanoyl
uramino
ureido
ureylene
(ureylenediureylene)
ursanyl

valeryl
valyl
vanillal
vanilloyl
vanillyl
vanillylidene
vanilmandeloyl
veratral
veratroyl
o-veratroyl
veratryl
o-veratryl
veratrylidene
vinyl
vinylene
vinylidene

xanthen-9-yl
xanth-9-yl
xenyl
xylidino
xyloyl
xylyl
xylylene

TABLE 4. Prefixes Which Are Part of the Base Name

Prefix	Example
form-	formaldehyde
acet-	acetamide
aceto-	acetonitrile
propio-	propionitrile
butyro-	butyrolactone
sulfon-	sulfonamide
phosphono-	phosphonothioate
cyclo-	cyclopentadiene
thio-	thioate
benzo-	benzoates
carbo-	carbodiimide
azo-	azobenzene
azoxy-	azoxybenzene

TABLE 5. Names to be Ignored in Choosing a Base Name from Amines

Hydrochloride	Hydrosulfate
Dihydrochloride	Dihydrosulfate
Hydrobromide	Sulfate
Dihydrobromide	

A.2.3. Organometallic Compounds

There will be a large number of compounds which contain organic groupings and metallic elements. These are organometallic elements. This group deserves some special attention since retrieval of these compounds is often difficult. Deriving the keyword for these compounds is quite easy in most cases. The abstracter need only recognize the metallic element (Table 6) prefix designing a metallic element and then derive the keyword by attaching the prefix organo- to the natural element.

Example 1 METHYLMERCURY CHLORIDE

The keyword is ORGANO-MERCURY

Example 2 TETRAETHYLLEAD

The keyword is ORGANO-LEAD

There may be some compounds which are more difficult to recognize than the above samples since the metallic element name has been shortened into a prefix (see Table 7) and may be buried within the chemical name. These compounds, however, will be easily recognized by performing the base derivation steps outlined in the preceding sections.

Example N-3-Phenoselenazinylarsanilic Acid

Table 6. Metallic Elements

METAL	KEYWORD
Aluminum	organo-aluminum
Antimony	organo-antimony
Arsenic	organo-arsenic
Barium	organo-barium
Beryllium	organo-beryllium
Bismuth	organo-bismuth
Calcium	organo-calcium
Cobalt	organo-cobalt
Copper	organo-copper

Germanium	organo-germanium
Iron	organo-iron
Lead	organo-lead
Lithium	organo-lithium
Magnesium	organo-magnesium
Mercury	organo-mercury
Nickel	organo-nickel
Potassium	organo-potassium
Selenium	organo-selenium
Silver	organo-silver
Sodium	organo-sodium
Tellurium	organo-tellurium
Tin	organo-tin
Zinc	organo-zinc

TABLE 7. Metallic Elements Prefix

PREFIX	KEYWORD
Arseno-	organo-arsenic
arsenoso-	"
arsenyl	"
Arsinetetrayl	"
arsinico	"
arsininyl	"
arsino	"
arsinyl	"
arsinylidene	"
arso	"
arsono	"
arsoranyl	"
arsoranylidyne	"
arsylene	"
arsylidyne	"
bismuthino	organo-bismuth
bismuthylene	"
bismuthylidene	"
epidiseleno-	organo-selenium
episeleno-	"
ferrocenediyl	organo-iron
germanetetrayl	organo-germanium
germanylene	"
germyl	"
germylene	"
germylidyne	"
plumbanetetrayl	organo-lead
plumbyl	"
plumbylene	"
plumbylidyne	"

seleneno-	organo-selenium
selenino	"
seleninyl	"
seleno	"
selenono	"
selenonyl	"
selenoxo	"
selenyl	"
stannanetetrayl	organo-tin
stannanylene	"
stannono	"
stannyl	"
stannylene	"
stannylidyne	"
stibinico	organo-antimony
stibino	"
stibo	"
stibono	"
stiboso	"
stibyl	"
stibylene	"
stibylidyne	"
telluro	organo-tellurium
telluroxo	"
telluryl	"

A.3 Listing of Common Chemical Keywords

Acenaphthylenes
Acetaldehydes
Acetals
Acetamides
Acetanilides
Acetates
Acetic acids
Acetoacetates
Acetophenones
Acetylenes
Acetylides
Acridines
Acroleins
Acrylamides
Acrylates
Acrylic acids
Acrylonitriles
Adenines
Adenosines
Adipates
Alanines
Alcohols
Aldehydes
Alginates
Allenes
Amides
Amidines
Amidoximes
Amine oxides
Amines
Andhydrides
Anilides
Anilines
Anils
Anisoles
Anthracenes
Anthraquinones
Azepines
Azides
Azines
Aziridines
Azirines
Azobenzenes
Azoles
Azoxybenzenes

Benzaldehydes
Benzamides
Benzanthracenes
Benzazepines
Benzenes
Benzenesulfonic acids
Benzidines
Benzilates
Benzimidazoles
Benzoates
Benzocycloheptenes
Benzofurans
Benzoic acids
Benzoins
Benzoinitriles
Benzophenones
Benzopyrans
Benzopyrenes
Benzothiadiazines
Benzothiazoles
Benzothiepins
Benzoxazoles
Benzoxepins
Bicarbonates
Biphenyls
Boranes
Borates
Borazines
Bornanes
Boronic acids
Butadienes
Butanes
Butanols
Butanones
Butenes
Butyrates
Butyrolactones
Butyrophenones

Carbamates
Carbamic acids
Carbazoles
Carbinols
Carbodiimide
Carbonic acids
Carboxaldehyde
Carboxamides
Carboximides
Catecholamines
Catechols
Cholines
Citrates
Coumarines
Cresols
Cumenes
Cyanates
Cyanides
Cyanogens
Cyclobutadiene
Cylobutanes
Cyclobutenes
Cycloheptanes
Cycloheptatrienes
Cyclohexadienes
Cyclohexanes
Cyclohexanols
Cyclohexanones
Cyclohexenes
Cyclooctanes
Cyclooctatetraens
Cyclopentadiene
Cyclopentadienes
Cyclopentanes
Cyclopentenes
Cyclopropanes

Decalins
Decanes
Diazines
Diazonium salts
Dienes
Dioxanes
Dioxins

Epoxides
Esters
Ethanes
Ethanolamines
Ethanols
Ethers

Ethylenes
Ethylenimines
Ethyres

Ferrates
Flavins
Flavones
Fluorenes
Fluoresceins
Formaldehydes
Formamides
Formates
Fumarates
Furans
Furfurals

Glutamates
Glutarates
Glycerides
Glycols
Glycosides
Guanidines
Guanines

Heptanes
Heptenes
Hexanes
Hexenes
Hexoses
Hippurates
Hydrazides
Hydrazines
Hydrazones
Hydroperoxides
Hydroquinones
Hydroxamic acids
Hydroxides
Hydroxylamines

Imidazoles
Imidazolines
Imides
Imines
Indenes
Indoles
Indolines
Isocyanates
Isocyanides
Isoindoles
Isoindolines
Isonicotinamides
Isonitriles
Isoquinolines
Isothiocyanates
Isothiuronium compounds
Isoxazoles

Ketenes
Ketones

Lactams
Lactates
Lactones
Laurates
Linoleates
Linolenates

Malates
Maleates
Malonates
Methacholines
Methacrylates
Methacrylonitriles
Methanes
Morpholines

Naphthacenes
Naphthalenes
Naphthenates
Naphthols
Naphthoquinones
Nicotinamides
Nicotines
Nitriles
Nitrosamines
Nonanes
Nucleic acids

Octanes
Oleates
Oxadiazoles
Oxalates
Oxazines
Oxides
Oximes
Oxiranes
Ozonides
Oxonium compounds

Palmitates
Pentaboranes
Pentanes
Pentanols
Pentanones
Pentenes
Pentrobarbitals
Peroxides
Peroxy acids
Phenanthrenes
Phenols
Phenothiazines
Phenylenediamines
Phosphinates
Phosphines
Phosphinic acids
Phosphites
Phosphonates
Phosphonic acids
Phosphonitriles
Phthalanilides
Phthalates
Phthalazines
Phthaleins
Phthalic acids
Phthalimides
Phthalocyanines
Picolines
Picrates
Piperazines
Piperidines
Porphyrins
Propanes
Propanols
Propionates
Propionic acids
Propiophenones
Propylenes
Propylene oxides
Purines
Pyrans
Pyrazines
Pyrazoles
Pyrazolidines
Pyrazolines

Pyrenes
Pyridazines
Pyridines
Pyridoxines
Pyrimidines
Pyrocatechols
Pyrroles
Pyrrolidines
Pyruvates

Quinolines
Quinones

Resorcinols
Ribonucleic acids

Salicylamides
Salicylates
Salicylic acids
Sebacates
Semicarbazides
Semicarbazones
Silanes
Silicones
Siloxanes
Stannates
Stearates
Steroids
Sterols
Stilbenes
Styphnates
Styrenes
Succinates
Succinic acids
Succinimides
Sulfamates
Sulfamic acids
Sulfanilamides
Sulfanilic acids
Sulfates
Sulfenates
Sulfenenic acids
Sulfides
Sulfinates
Sulfinic acids
Sulfonamides
Sulfonates
Sulfones
Sulfonic acids
Sulfoxides

Tartrates
Terphenyls
Tetrazines
Thiadiazoles
Thiazines
Thiazoles
Thiepins
Thioacetic acids
Thioamides
Thiocarbamates
Thiocyanates
Thiols
Thiones
Thiophenes
Thioureas
Thymidines
Toluenes
Toluenesulfonic acids
Toluidines
Tosylates
Triazenes
Triazines
Triazoles
Tropanes

Undecylenic acids
Uracils
Ureas
Urethanes
Uric acids

Valerates
Valeric acids

Xanthates
Xanthenes
Xanthines
Xylenes

Ychimbans

APPENDIX B. EDITORS' QUERY AND CRITIQUE SHEET

The Editors' Query and Critique Sheet, which can be seen as Figure 4, is used when questions arise, comment must be made, or direction must be given in editing technical copy, including abstracts, which is generated in the NIOSH system.

The form is intended to overcome a number of problems, including:

1) Unclear instructions for copy preparation.
2) Unanswered questions, usually in the form of question marks buried in the copy, which are not resolved before submission of the copy for preparation and which are often not recalled at a later time by the editor.
3) Lost information through verbal communication.

In this reference, the editor is considered to be any person, research associate, research assistant, abstracter, indexer, or technician who works with the copy for making necessary changes or corrections in form or content. The work function can be proofreading or editing.

The form is applicable for abstracts, thesauri, dictionaries, reports, manuals, papers, or any other technical documentation.

Use of the form is not intended to supplant the use of proofreaders' marks for indicating clearly changes and corrections to the copy. The form is used for necessary changes and corrections which cannot be indicated adequately by the proofreaders' marks, and when marginal notations would be insufficient, or ambiguous, to the system for indicating the editor's intent.

SYSTEMS RESEARCH COMPANY
EDITORS' QUERY AND CRITIQUE SHEET

TO _____ LOCATION _____ PAGE _____ OF _____

SUBJECT _____ DATE _____

NARRATIVE

No.	Page	Lines	Question or Comment

EDITOR _____ LOCATION _____ TELEPHONE _____ X _____

SRC Form R11 (8/73)

Figure 4. Editor's Query and Critique Sheet

When a query or comment concerning a specific document is made, the document must be identified. When possible, abstracts should be identified by NIOSH number. For effective response to the query or comment, the document part which is of concern should be indicated.

When more than one specific query or comment is made, each should be identified. More than one question should not be asked in one query, nor should more than one comment be combined, if an effective answer is expected.

No. refers to the identifying number of the query or comment, if more than one query or comment is made.

Page refers to the page of the document which is of concern.

Lines refers to the line(s) of the page of the document which is of concern.

Question or Comment refers to the message of the query or comment. The identity of the document in question is included in this area. When several documents are concerned individually, the identity of each affected document is specified for the related query or comment.

In some cases, the query and critique form will be sent away from the editorial department for reaction or response. For utility and effectiveness, the information that is necessary for conveying the intended message should be complete and clearly given. No reliance should be made upon a verbal explanation of what is meant by the message. The editor and the message are not expected to be in the same place at the same time.

Reaction or response to the editorial criticism or question is expected to come at a somewhat later time than when the form is prepared. It is good practice

to make a reprographic copy of the questions and comments, and sometimes of the subject information, for future reference so that memory is not relied upon.

All of the control information at the top and bottom of the form which is necessary for identifying the person addressed, and for identifying the editor and indicating where the editor can be reached, should be entered on the form.

TO refers to the addressee.

LOCATION (top of form) refers to the location of the addressee, and is Philadelphia, Cincinnati, or Rockville, unless otherwise specified; LOCATION (bottom of form) refers to the location of the editor, and is Philadelphia or Cincinnati, unless otherwise specified.

PAGE____OF____refers to the page count of the query and critique sheet(s) submitted. The sheets may be used in continuation.

SUBJECT refers to the document(s) being edited. For editing of abstracts, 'ABSTRACTS' may be used; 'THESAURUS' may be used for compilation of thesauri, unless a specific thesaurus is intended, in which case, the name of the thesaurus is used; for other documents, such as manuals and reports, the name of the document is used.

NARRATIVE provides for statement, explanation, or description of a problem or desired action in the editor's own terms, which information may be general or specific as applicable.

EDITOR is the person who asks the question or makes the comment.

TELEPHONE refers to the telephone number and extension where the editor can be reached. The information should include the area code for any forms sent out of town.

NOTE: The telephone number is important for the instances where it is quicker and more convenient to get an immediate answer than to wait for mail delivery.

The query and critique sheet should be used for all communications concerning technical copy which go outside of the immediate editor group. The query and critique sheet must be used for all such communications outside of the company, unless the editor is specifically directed otherwise.

When the query and critique sheet is used for communications outside of the company, the responsible supervisory editor must be made aware of such communications, and the content of such communications, unless the editor is specifically directed otherwise.